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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
ADMINISTRATION BRANCH, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

Published by Authority of the Hon. Alvin Hamilton, Minister of Agriculture

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ECONOMICS DIVISION
A. H. TURNER, Director

FEBRUARY 1962 Vol. XXXII No. 1

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G. P. BOUCHER, Editor

Published by Authority of the Honourable Alvin Hamilton
Minister of Agriculture

ANNUAL AND MONTHLY INDEX NUMBERS
Wholesale Prices, Farm Prices and Living Cost Indexes

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935-39=100						1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	222.5	180.9	264.1	244.6	276.7	222.7	128.0	122.2	167.6
1960										
Sept..........	230.5	220.2	166.8	273.6	245.0	....	....	128.4	123.3	167.6
Oct..........	230.6	217.8	168.0	267.8	245.3	....	....	129.4	125.8	166.9
Nov..........	229.9	218.7	167.8	269.7	244.7	....	....	129.6	125.5	165.9
Dec..........	230.4	221.8	168.6	275.0	247.3	....	....	129.6	125.3	166.0
1961										
Jan..........	231.3	223.3	169.6	277.1	248.2	271.8	223.5	129.2	124.4	165.8
Feb..........	231.6	222.8	169.2	276.3	249.0	....	....	128.9	124.0	166.3
Mar..........	231.3	218.5	168.4	268.6	246.7	....	....	129.1	124.0	165.5
April..........	230.9	215.2	168.7	261.7	242.7	283.4	226.6	129.1	123.9	168.5
May..........	231.3	216.0	167.6	264.4	241.6	....	....	129.0	123.2	169.1
June..........	231.4	218.7	172.8	264.7	244.1	....	....	129.0	123.5	172.7
July..........	234.5	218.4	171.5	265.3	244.3	....	....	129.0	124.9	172.5
Aug..........	234.5	214.0	162.6	265.4	237.9	287.8	230.0	129.1	125.2	175.4
Sept..........	235.3	216.0	159.8	272.3	241.0	....	....	129.1	123.2	176.9
Oct..........	235.3	217.3	159.3	275.3	241.1	....	....	129.2	123.3	177.1
Nov..........	235.3	216.6	158.2	275.0	241.6	....	....	129.7	123.6	....
Dec..........	236.5	217.0	159.8	274.2	242.8	....	....	129.8	124.5	....

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

National Accounts.—Canada's gross national product, seasonally adjusted, rose by 2.7 per cent in the third quarter of 1961 to $37,364 million from $36,396 million in the second quarter of the year. This was the largest quarter-to-quarter advance recorded for some time; it stemmed almost entirely from an increase in the physical volume of output, the price index of the total G.N.P. having remained at about the same level as in the previous quarter. This latest gain in output has raised the physical volume about three per cent above the level for the first quarter of 1960, which marked the peak of the last business cycle expansion.

The larger output in the third quarter was supported by a marked increase in labor income and another marked increase in corporation profits which brought them above the peak level of the fourth quarter of 1959.

The expansion in total final purchases was one of the largest ever recorded. All components of gross national expenditure were rising in the quarter with the exception of business and agricultural inventories; business inventories accumulated at a little slower rate and agricultural inventories were affected by a poor crop output in western Canada. The reversal of a two-quarter downward trend in business outlays for new plant and equipment added a great deal of new strength to total final demand. Outlays for new housing were also higher, after a slight decline in the second quarter. Transactions on current international account exerted a neutral effect; the rise in exports of goods and services was matched by a corresponding rise in imports and the deficit remained at the same level. Government and consumer outlays continued to exert an expansionary influence on the total flow of expenditures.

In brief, the changes in gross national expenditure, at seasonally adjusted annual rates, were as follows:

	1961		Percentage change	
	Second quarter	Third quarter	1961 Second to third quarter	Jan.-Sept. 1960 to Jan.-Sept. 1961
	million dollars			
Personal expenditure	24,180	24,560	1.6	4.2
Government expenditure	7,188	7,376	2.6	8.1
Residential construction	1,480	1,568	5.9	1.8
Non-residential construction	2,432	2,552	4.9	−3.5
Machinery and equipment	2,292	2,448	6.8	−5.5
Value of physical change in business inventories	140	72	[a]	[a]
Farm inventories and grain in commercial channels	−440	−548	[a]	[a]
Exports	7,300	7,752	6.2	5.6
Imports	−8,156	−8,596	5.4	2.8
Residual error	−20	180	[a]	[a]
Gross national expenditure (value)	36,396	37,364	2.7	1.9
Price component			0.1	0.8
Volume component			2.6	1.1

[a] Percentage changes not meaningful.

Balance of Payments.—Canada's current deficit from transactions in goods and services with other countries totaled $80 million in the third quarter of 1961, compared with $122 million in the third quarter of the previous year; this deficit was also smaller than in any corresponding period since 1954. Merchandise exports rose more than imports, leaving an export balance of $120 million from merchandise trade; the deficit from non-merchandise transactions totaled $200 million compared with $204 million in the corresponding quarter of 1960.

In the first nine months of 1961 the current deficit was reduced to $746 million from $913 million in the first nine months of 1960. This reduction stemmed entirely from the shift from an import to an export balance on merchandise account. The deficit of $829 million from non-merchandise transactions was about nine per cent higher.

Consumer Prices.—Canada's consumer price index (1949=100) rose to 129.7 in November 1961 from 129.2 in October and 129.1 in September. Changes in the index components were as follows:

	November	October	September
Food	123.6	123.3	123.2
Housing	133.7	133.6	133.5
Clothing	114.0	113.6	113.1
Transportation	141.5	140.0	140.0
Health and personal	156.7	155.3	155.0
Recreation and reading	146.3	146.2	146.7
Tobacco and alcohol	117.3	117.3	117.3

Labor.—Total employment declined less than seasonally between October and November 1961 and the increase in unemployment was unusually small. The following figures supply a brief description of the changes in the situation since November 1960:

	November 1960	October 1961	November 1961
	(estimates in thousands)		
Labor force	6,458	6,538	6,504
Employed	6,029	6,220	6,155
Unemployed	429	318	349

Agriculture was chiefly responsible for the 65,000 decrease in employment between October and November, since employment remained stable in non-farm industries. The increase in employment, compared with November 1960, is chiefly attributable to the increasing number of workers hired in manufacturing and service industries. The numbers employed in these industries were 96,000 and 78,000 higher, respectively, than a year earlier. Small declines occurred in most other industries.

The October-November increase in unemployment was the smallest in five years. By comparison with a year before, 70,000 fewer persons were without work and seeking work and 10,000 fewer were temporarily laid off.

Industrial Employment.—Canada's composite index of industrial employment (1949=100) declined to 123.2 in September from 123.9 in August 1961. In other recent years the indexes for September had reached their annual high levels. Average weekly wages and salaries rose to $78.73 from $78.27 but the payroll index remained at 227.7.

Most of the major industrial divisions recorded lower levels of employment in September than in August. The largest decline occurred in construction and in the service industries, which together accounted for over half the decrease in the composite index.

Retail Trade.—Retail sales in October 1961 were estimated at $1,378.0 million, compared with $1,400.2 million in October 1960. Sales in the January-October period rose to $13,396.2 million in 1961 from $13,309.6 million in 1960.

Department Store Sales.—Department store sales were estimated at $132.7 million in October 1961, compared with $135.3 million in October 1960. January-October sales rose to $1,127.7 million in 1961 from $1,091.6 million in 1960.

Chain Store Sales.—Chain store sales were estimated at $288.6 million in October 1961, compared with $296.0 million in October 1960. January-October sales rose to $2,800.0 million in 1961 from $2,725.5 million in 1960.

Wheat.—Supplies of wheat remaining on or about November 1, 1961 in the four major exporting countries, for export and carryover at the end of their respective crop years, totaled 2,392.2 million bushels, a 15 per cent decline from the 2,806.5 million bushels available a year previously.

During the August-October period of the current crop year total exports of wheat and of flour, in terms of wheat, from the four major exporting countries reached an unprecedented level of 357.3 million bushels, which is about 25 per cent above the 285.8 million bushels exported during the corresponding period of 1960 and about 75 per cent above the ten-year (1950-59) August-October average of 204.3 million bushels.

Wheat and flour exports, including exports under government programs, from the United States, Canada and Australia were at higher levels in the August-October period of 1960 than in the corresponding period of 1961 but those from Argentina were sharply reduced. Exports from the four major wheat exporters in the August-October period, in million bushels and with figures for 1960 in brackets were as follows: United States, 188.3 (150.8); Canada, 106.9 (81.8); Argentina, 6.2 (25.5); and Australia, 55.9 (27.7).

Fluid Milk.—Sales of fluid milk and cream, in milk equivalent, totaled 486.8 million pounds in October 1961, an increase of one per cent from October 1960. Sales in the January-October period totaled 4,810.4 million pounds, also an increase of one per cent from the corresponding period of 1960.

Dairy Factory Output.—Larger quantities of creamery butter, cheddar cheese, ice cream mix and skim milk powder were produced in November and in the January-November period of 1961 than in the corresponding periods of 1960. The output of evaporated whole milk was smaller in November 1961 than in November 1960 but larger in the 1961 than in the 1960 January-November period.

Production totals for November, with figures for 1960 in brackets, were as follows: creamery butter, 21.7 million pounds (18.1 million); cheddar cheese, 8.0 million pounds (6.4 million); ice cream mix, 1.2 million gallons (1.1 million); evaporated whole milk, 17.1 million pounds (19.1 million); and skim milk powder, 11.8 million pounds (9.3 million).

January-November totals were as follows: creamery butter, 333.4 million pounds (304.4 million): cheddar cheese, 110.2 million pounds (104.6 million); ice cream mix, 19.7 million gallons (19.3 million); evaporated whole milk, 310.0 million pounds (300.3 million); and skim milk powder, 199.2 million pounds (157.6 million).

Stocks of Dairy and Poultry Products.—Stocks at December 1, 1961 were larger than a year previously for creamery butter, cheddar cheese, evaporated whole milk, skim milk powder and poultry meat, and smaller for cold storage eggs. December totals, with figures for 1960 in brackets, were as follows: creamery butter, 145.4 million pounds (125.5 million); cheddar cheese, 66.7 million pounds (57.5 million); evaporated whole milk, 69.0 million pounds (53.7 million); skim milk powder, 35.2 million pounds (24.7 million); poultry meat, 65.5 million pounds (49.0 million); and cold storage eggs, 1,000 cases (2,000).

Process Cheese.—Production of process cheese from cheddar and other hard or cream cheese base declined to 4.6 million pounds in November 1961 from 5.1 million pounds in October and 5.0 million in November 1960. The January-November total rose to 51.8 million pounds in 1961 from 50.9 million in 1960. Stocks held by manufacturers totaled 2.8 million pounds at the end of November 1961, compared with 2.2 million at the end of October and 2.5 million at the end of November 1960.

Meat and Lard.—Stocks of meat in cold storage totaled 76.0 million pounds at December 1, 1961, compared with 68.8 million at November 1 and 68.7 million pounds at December 1, 1960. Holdings of cold storage frozen meat totaled 46.0 million pounds at December 1, 1961, 37.4 million pounds at November 1 and 38.0 million pounds at December 1, 1960. Corresponding figures for fresh meat are 20.7 million pounds, 23.1 million and 20.7 million and corresponding figures for cured meat, 9.3 million pounds, 8.3 million and 10.0 million pounds.

Holdings of lard totaled 4.9 million pounds at December 1, 1961, 4.2 million at November 1 and 4.7 million pounds at December 1, 1960. Stocks of tallow totaled 3.9 million pounds at December 1, 1961, 4.3 million at November 1 and 3.4 million pounds at December 1, 1960.

Margarine.—Production of margarine, including spreads, rose to 18.1 million pounds in November 1961 from 14.8 million in November 1960 and to 168.9 million pounds in January-November 1961 from 151.9 million pounds in January-November 1960. Stocks held by manufacturers, wholesalers and other warehouses at December 1 rose to 5.0 million pounds in 1961 from 4.6 million pounds in 1960.

Fruits and Vegetables.—Larger quantities of apples, fruit (frozen and in preservatives), potatoes, carrots and vegetables (frozen and in brine) but smaller quantities of pears, onions, cabbage and celery were held in cold and common storage at December 1, 1961 than at December 1, 1960. Holdings of fruit at December 1, with figures for 1960 in brackets, were as follows: apples, 8.0 million bushels (6.5 million); pears, 140,000 bushels (192,000); and fruit (frozen and in preservatives) 48.8 million pounds (41.5 million). December 1 stocks of vegetables were: potatoes, 18.0 million cwt. (16.2 million); onions, 1.2 million bushels (1.6 million); carrots, 1.2 million bushels (803,000); cabbage, 155,000 bushels (167,000); celery, 26,000 crates (48,000); and vegetables (frozen and in brine), 66.3 million pounds (62.3 million).

Farm Cash Income.—Farm cash income from the sale of farm products during the first nine months of 1961 reached an all-time high mark of $2,121.0 million; this estimate is four per cent above the figure of $2,039.7 million for the first nine months of 1960 and 3.1 per cent above the previous record peak of $2,056.8 million in the first nine months of 1959. These estimates include Canadian Wheat Board participation payments, net cash advances on farm-stored grain in western Canada and deficiency payments made under the provisions of the Agricultural Stabilization Act.

Wheat, flaxseed, tobacco, cattle, calves, hogs, dairy and poultry products, and Canadian Wheat Board participation payments were the chief contributors to the increase in farm cash income. The gains recorded by these items were offset, to some extent, by greatly reduced returns from potato sales, a large net repayment of cash advances on farm-stored grains in western Canada, and a somewhat lower income from oats and barley.

Farmers in western Canada also received supplementary payments totaling $8.4 million, compared with $51.1 million during the first nine months of 1960. Payments in 1961 consisted almost entirely of payments made under the provisions of the Prairie Farm Assistance Act whereas, in 1960, they included $21.1 million of P.F.A.A. payments, $17.7 million paid out under the Western Grain Producers' Acreage Payment Plan, and $12.3 million paid out under the Federal-Provincial Emergency Unthreshed Grain Assistance Act. During the third quarter of 1961 Prince Edward Island potato growers received about $390,000 for losses sustained from fusarium rot in the potato crop. When combined, cash income from the sale of farm products and supplementary payments totaled $2,129.3 million for January-September 1961, compared with $2,090.8 million and $2,078.2 million for the corresponding periods of 1960 and 1959, respectively.

FARMER'S VIEWS ON RURAL LIFE IN PRINCE EDWARD ISLAND—(cont'd)

D. DYCK

Migration of Farm Operators and Farm Abandonment.—A total of 119 respondents (41 per cent) said there had been some migration of farm operators from their communities, and 63 of these said that some farms in their area had been abandoned. One of the other respondents said that a few farms formerly operated by bachelors had been abandoned when the operators died.

The data in Table 5 show that some movement of farm operators had occurred in all areas, and the proportion of the respondents who said that such migration had taken place in their area varied from 34 per cent in area I to 48 per cent in areas III and IV. A relatively greater variation was found between areas in the proportion of respondents who said that farms were left abandoned in their communities; only 16 per cent of the area I respondents indicated farm abandonment as compared with 33 per cent in area IV. In general, a smaller percentage of the respondents in area I than elsewhere said that farm operators were moving out of their area or that farms were being abandoned.

Table 5.—Respondents Indicating a Movement of Farm Operators out of Their Communities and Farm Abandonment, Number and Per Cent by Type of Response and Area, Prince Edward Island Study, 1959

	Number of farms studied	Respondents indicating a movement of farm operators from their community	Respondents indicating farm abandonment in their community
Area I	93		
Number		32	15
Per cent		34	16
Area II	96		
Number		39	22
Per cent		41	23
Area III	66		
Number		32	16
Per cent		48	24
Area IV	33		
Number		16	11
Per cent		48	33
Total	288		
Number		119	64
Per cent		41	22

A total of 104 operators gave their opinions on why some of the established farmers were migrating from their area. The low income of people in rural areas was mentioned the most frequently (77 respondents). This was expressed in terms such as "they moved to obtain higher income", "they couldn't make a go of farming", and "they couldn't make an adequate income in this community because of low farm product prices". Two of these respondents thought that the possibility of drawing unemployment insurance during a lay-off from a nonfarm job was an inducement for people to move off the farm and into nonfarm work. Perhaps more people would remain in rural communities if nonfarm jobs became available in the areas. Two of the farmers suggesting income conditions as the reason for the movement of farm operators also thought that the lack of facilities in rural areas, specifically electricity and improved roads, was a contributing factor.

Six respondents mentioned the lack of farm labor for hire as a factor in population movement out of rural communities, and seven thought that poor soil or other farming conditions in their particular area were the cause of the exodus. Another group of 14 respondents referred to personal characteristics, such as lack of interest in farming, poor health, and semi-retirement age.

In general, a smaller proportion of the respondents from area I than from the other areas indicated a movement of young people and farm operators from their communities. The major reason for this movement of people (in all areas) was thought to be the low income obtainable in rural areas of Prince Edward Island. In the case of young people, the factors of a lack of adequate capital to start farming, the "pull" effect of working and living conditions in urban areas, and the lack of interest in farming were also mentioned. Additional factors, according to the respondents, were the lack of interest in farming, old age of operator, lack of farm labor and poor farming conditions generally. More than one-half of the respondents indicating a movement of established farmers from their communities also pointed to farm abandonment in their areas; and, as in the case of population movement, a smaller proportion of the farmers in area I than of farmers in other areas spoke of this migration.

Opinions on the Effect of Population Movement out of Rural Communities.— Some of the effects of the movement of people out of Prince Edward Island rural communities have been indicated or suggested in previous sections of this study, one of the major effects being that land was left idle. In this section other effects (as indicated in respondents' opinions) of the movement of people will be specified. Of the 288 respondents, 16 did not give any opinion in this regard and 81 thought the movement had no additional consequence. In all, 191 operators stated what they thought were some of the other effects of the movement of people out of rural areas. These opinions may be summarized as follows; (Some respondents gave more than one opinion, which accounts for the total of 247 opinions).

1. The movement of people out of rural areas makes it difficult for farm operators to obtain labor for hire. Another aspect of labor availability was the shift into nonfarm work. Whether or not this shift was accompanied by a movement out of the community, many of the respondents felt that the benefit of unemployment insurance for nonfarm work placed farmers at a disadvantage in the labor market in that people preferred jobs which qualified them for the insurance. (68 respondents).

2. It is more difficult to obtain and maintain community facilities and services in areas of sparse population. People remaining in these areas had to pay higher taxes, and some farmers were so isolated that they were unable to obtain these facilities and services except at an almost prohibitive cost. Specific reference was made to schools (educational facilities were mentioned most frequently), churches, electricity, telephone and retail stores. (48 respondents).

3. The decline in population has resulted in less social life or activities in the community (46 respondents). Only the old people are staying on the farms, the younger people are all moving away (18 respondents).

4. The movement of established farmers and young people out of rural communities has a generally depressing effect. Respondents thought that the movement created "a general feeling that one can't make a living on the farm", and that community organizations and functions suffered as a result. (53 respondents).

5. Although most of the respondents saw only adverse effects in the decline in population, eight had a positive outlook. Some people thought that the decline in number of farm operators enabled the remaining farmers to enlarge their farms and that people were probably better off financially as a result of the decline than before.

A summary of the opinions on the effect of population movement (other than farm abandonment) is given in Table 7. Relatively more of the respondents in area IV than in the other areas were concerned with the scarcity of farm labor and the greater isolation as a result of the population movement out of rural communities. On the other hand, none of the respondents in area III mentioned the fact that only old people were being left to carry on farming operations in the community.

Opinions on the Effect of Unemployment Insurance.—Of the 288 respondents 286 had something to say on the effects of unemployment insurance on conditions in their respective communities; 84 thought the effects were only favorable, 116 that the insurance had only unfavorable effects, and 35 suggested that, although their community derived some benefits from unemployment insurance, these advantages were offset by some unfavorable effects. Fifty-one respondents said that insurance did not affect conditions in their community.

Table 6.—Opinions on Why Established Farmers are Leaving their Communities, Per Cent of Respondents by Type of Opinion and Area, Prince Edward Island Study, 1959

	Respondents indicating a movement of established farmers from their community	Type of Opinion				
		Inadequate income	Personal reasons	Other farming conditions	Lack other farm labor	No opinion
	—number—	—per cent of operators indicating movement—				
Area I	32	69	12	3	3	12
Area II	39	69	13	3	3	13
Area III	32	63	9	12	3	12
Area IV	16	50	12	6	19	12
Total	**119**	**65**	**12**	**6**	**5**	**13**

Table 7.—Opinions on the Effect of the Movement of Population out of Rural Areas, Per Cent of Farm Operators by Type of Opinion and Area, Prince Edward Island Study, 1959

	Respondents indicating movement of people from their communities	Type of Opinion						
		Scarcity of farm labor	Generally a depressing effect	High cost of community facilities	Greater isolation	Only old people are left	Positive outlook	No opinion
	—per cent of operators—							
Area I	55	40	31	24	15	9	5	2
Area II	72	33	14	26	21	13	6	4
Area III	53	15	40	26	28	–	2	–
Area IV	27	52	15	7	30	15	–	4
Total	**207**	**33**	**26**	**23**	**22**	**9**	**4**	**8**

The favorable effects indicated by 119 respondents were, of course, monetary in nature, and the community in general as well as the individual recipients of payments benefited from the insurance. Opinions on the unfavorable effects centered on the idea that it induced people to shift out of agriculture and into other occupations. People preferred to work at jobs which would qualify them for insurance payments. One result of this was a scarcity of labor for hire (110 respondents, 88 on commercial farms). Moreover, insurance benefits were a source of income and enabled people to remain unemployed during layoffs from nonfarm jobs, even though farm jobs might be available. Hence the opinion that the insurance encouraged idleness (32 respondents). Also, the opinion was given (by 19 respondents) that unemployment insurance affected land use in an indirect way. Owners of farm properties, as well as other people, were induced to take on nonfarm jobs (such as fishing). Most of these people retained their holdings but reduced their farming operations to the point where the land was no longer fully utilized. Thus, by way of inducing farm property owners to take on nonfarm jobs, the respondents thought that unemployment insurance was partly the cause of the reduction in farming in their communities.

Land Owned by Recipients of Old Age Pensions.—The Government of Canada provides a universal pension of $55 a month for persons aged 70 years or over, subject to residence qualifications. In addition, federal-provincial programs provide for a payment of $55 a month in old age assistance to persons from 65 to 70 years of age who are in need, also subject to residence qualifications. Thus it is possible for 65-year old and older people to have an annual income of $660 from government sources.

Information was obtained on the effects of old age pensions in the respondents' communities. Many respondents referred to the utilization of land on farms owned by pensioners (167 respondents). Other respondents referred to the feeling of independence that pension income gave the elderly people (57 respondents, 19 of whom also mentioned land use), and the income benefits derived from the pensions by the recipients, their families and the communities generally (47 respondents).

Of the 167 respondents who referred to conditions of land use on farms owned by pensioners, 116 said that most of the land remained under cultivation in their communities and this was achieved in various ways. Eighty-three respondents said that younger people (mainly sons of the owners) took over the operation of the farm. In most cases the arrangement between the pensioned owner and the operator apparently was quite informal, since only eight respondents mentioned sales or leases in this connection. Twenty-seven respondents said that pensioners in their area made arrangements to have some of the farm work done by other people and six operators said that in their community the elderly people all did the farm work themselves.

Forty-four respondents said that the land in farms owned by pensioners was left idle. The data in Table 8 indicate that this occurred primarily in areas II and III, areas where there had been a decrease in improved acreage during 1941-1956, according to the Census. Seven other respondents said that some of these farms were being cultivated while others were left idle. Thus, a total of 51 operators said that some farm land was left idle as a result of the operators reaching retirement age.

Small-scale Farm Operators.—The analysis of individual farms indicated that 49 (17 per cent) of the 288 respondents resided on small-scale farms. By definition, the operators of these holdings produce less than $250 worth of agricultural products for sale and depend primarily on nonfarm sources for their cash income. These income sources are mainly some type of nonfarm employment or, in the case of older people, an old-age pension (15 of the small-scale farmers received old age pension). Hence the operators of small-scale farms are mostly people who have virtually shifted out of agriculture as an occupation but reside on farms; some of them are employed at nonfarm work and others are in some stage of retirement.

The analysis of the survey farms also indicated that the improved land area in small-scale farms was not fully utilized. This suggests that farming operations on these holdings were carried on more extensively in the past, and that these operations were practically discontinued when the operators did nonfarm work or had a pension.[1]

Table 8.—Land Use on Farms Owned by Recipients of Old Age Pensions, Number and Per Cent of Operators by Type of Response and Area, Prince Edward Island Study, 1959

	Number of farms studied	All or most of the land remains under cultivation, with a reduction in operations by the owners on some farms	Some land is left idle	All land is left idle
Area I	93			
Number		48	—	1
Per cent		52	—	1
Area II	96			
Number		45	1	12
Per cent		47	1	12
Area III	66			
Number		6	5	31
Per cent		9	8	47
Area IV	33			
Number		17	1	—
Per cent		51	3	—
Total	288			
Number		116	7	44
Per cent		40	2	15

A concentration of small-scale farmers in a given area would have important economic and social implications. A concentration of old-age pensioners would have special consequences for rural social institutions such as schools, churches and rural organizations, etc.; farm organizations and land use would be affected whether the small-scale farmers were people with nonfarm jobs or pensioners; and many of the other aspects of rural life and agriculture would also be affected.

Small-scale farming is therefore significant from many standpoints: (1) the operators are people who have moved out of agriculture as their main occupation; (2) the land in small-scale farms is not fully utilized; and (3) the concentration of small-scale farmers in an area has definite implications for schools and other institutions, farm organizations, etc. There is another aspect, anticipatory in nature, regarding people on small-scale farms and other rural residents who have discontinued farming. Since these people have already moved out of agriculture (into other occupations, or into retirement) it might be expected that a change in conditions in favor of urban over rural residence would indice them to move out of rural areas. Information relevant to this aspect of "potential" migration was obtained from the respondents in terms of why people who have ceased farming in their communities continue to reside in farm homes. A total of 205 respondents (71 per cent) indicated that there were such people in their communities, and 171 of these gave their opinions (206) on why these people remained in rural areas; these involve matters of finance, sentiment, age and state of health and they may be summarized as follows.

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[1] To an extent, the situation on part-time farms is similar to that on small-scale farms; in this study, 14 of the 46 part-time farmers received old-age pensions, and land on these farms was not utilized fully. The subsequent discussion, however, relates to rural residents who have discontinued farming.

1. **Cheaper living.** The most frequently expressed opinion, as to why people who had ceased farming remained in farm homes, was that living costs were lower in rural than in urban areas. Specific reference was made to the fact that people would grow their own vegetables in rural areas, reduce their fuel costs by securing the needed fuel from the farm woodlot, and they would not have to pay rent when residing in their farm homes. Respondents thought that this was the major reason for retired people as well as people with nonfarm jobs remaining in rural residences. Although not mentioned specifically, the low tax rate on farms in Prince Edward Island also contributes to cheaper living. With reference to retired people, four of the respondents also indicated that people wished to stay because their friends and acquaintances were in the community. (115 respondents).

2. **This community is their home and nobody wants to leave it.** This sentiment was suggested as the reason why both retired people and people with nonfarm jobs, remained on farms. Three respondents said that in most cases people inherited the holdings on which they resided, and one also thought that the people in his area did not have enough education to move to the city. (55 respondents).

3. **Other financial reasons.** Nine respondents said that people were unable to sell their farms, and five others said that the holdings were kept as a form of insurance in case of a layoff from nonfarm work. One respondent thought that people in his community did not have the funds to move to town. (15 respondents).

4. Compared to urban life, rural life has *certain attributes* which people wish to remain. "They can live more independently", "they are more contented", and "the country is a better place to raise children". (Nine respondents).

5. **Old age or ill health** prevented retired people from moving out of rural communities. (Seven respondents).

A summary of these opinions on why people who have ceased farming operations continue to reside on farms is given in Table 9.

Opinions on Needed Community Improvements.—The existing and changing conditions in the respondents' communities have been discussed in terms of population movement, facilities, and farm abandonment. The respondents' opinions on why these changes were taking place have also been reported. In this section opinions on what is needed to improve the communities will be discussed. A total of 264 respondents gave their opinions, and these relate mainly to (1) community facilities and services and social conditions (Table 10), and (2) various aspects of farming, farm organizations and extension work. (Table 11).

Despite the fact that the respondents lived within a mile (on the average) from a gravel road, their major concern in terms of needed community facilities was with roads. About one-third of the respondents (concentrated mainly in

Table 9.—Opinions on Why People who have Ceased to Farm Continue to Reside on Farms, Per Cent of Operators by Type of Opinion and Area, Prince Edward Island Study, 1959

	Respondents stating there were people in in their communities who had ceased to farm	Type of opinions					
		Cheaper living	Attachment to farm home	Other financial reasons	Attributes of rural life	Old age or ill health	No opinion
	—number—	—per cent of operators—					
Area I	61	56	23	6	7	3	18
Area II	65	61	25	9	3	5	14
Area III	62	48	35	7	3	3	16
Area IV	17	71	18	6	6	—	24
Total	**205**	**56**	**27**	**7**	**4**	**3**	**17**

areas I and II) were of the opinion that paved roads were needed in their community. The respondents probably wished to have roads which would be kept passable throughout the year, and to which they would have easy access from their farmsteads during winter.

Although a relatively small number (53 per cent) of the respondents had electric lighting in their homes, only 16 per cent expressed the opinion that

Table 10.—Opinions on Needed Improvements in Community Facilities and Services and Social Conditions, Number and Per Cent of Farm Operators by Type of Opinion and Area, Prince Edward Island Study, 1959

	Number of farms studied	Opinions on					
		Community facilities and services [a]					Social conditions
		Roads	Electricity	Schools and education generally	Telephone	Other	
Area I	93						
Number		39	17	8	3	4	15
Per cent		42	18	9	3	4	16
Area II	96						
Number		31	20	5	8	3	29
Per cent		32	21	5	8	3	30
Area III	66						
Number		14	2	7	8	7	18
Per cent		23	3	11	12	11	27
Area IV	33						
Number		8	7	2	—	—	8
Per cent		24	21	6	—	—	24
Total	**288**						
Number		92	46	22	19	14	70
Per cent		32	16	8	7	5	24

A total of 30 respondents referred to one or more of the facilities and services listed.

Table 11. Opinions on Needed Improvements Relating to Farming and Other Aspects of Rural Life, Number and Per Cent of Operators by Type of Opinion and Area, Prince Edward Island Study, 1959

	Number of farms studied	Opinions on					No improvements needed
		Farming aspects	Farm organization	"Rural beautification"	Extension work	Nonfarm employment	
Area I	93						
Number		16	8	9	6	1	8
Per cent		17	9	10	6	1	9
Area II	96						
Number		19	9	1	4	2	12
Per cent		20	9	1	4	2	12
Area III	66						
Number		19	4	4	5	1	4
Per cent		29	6	6	8	2	6
Area IV	33						
Number		8	—	2	—	1	—
Per cent		24	—	6	—	3	—
Total	288						
Number		62	21	16	15	5	24
Per cent		22	7	6	5	2	8

the introduction of electricity into their community was one of the improvements required. As in the case of roads, the respondents suggesting the need for this facility in their communities were concentrated in areas I and II. Improvements in school facilities and the curriculum were suggested by about eight per cent of the respondents. They mentioned that schools in their areas should be improved and enlarged. They were also concerned with the subjects taught in rural schools; specifically it was suggested that agriculture should be included in the curriculum[1] and physical training should be made compulsory. Some vocational training should also be added but the type of training desired was not specified.

The relatively small proportion of respondents who thought there was a need for improvements in educational facilities and programs would suggest that, in general, they are content with the present situation. Regarding vocational training or education in agriculture in particular, this is available to Prince Edward Island people at the Agricultural College in Truro, Nova Scotia, at no cost other than board and room. However, the Canada Department of Labour found that there is an apparent lack of demand by Prince Edward Island farmers for such training for their sons.[2] The reason suggested for this lack of interest is that farmers apparently wish their sons to enter other vocations and lack appreciation of a need for specific training in agriculture for future farmers. Considering (1) the small number of respondents (22, or eight per cent) who had any suggestion to make regarding improvements in training or education, and (2) the fact that Prince Edward Island is primarily an agricultural area, the findings of the 1959 Prince Edward Island study concur with those in the report issued by the Department of Labour.

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[1] The subject of agriculture was replaced in public schools by natural science some years ago. See *Vocational Training Program in Canada*, Report No. 5, Department of Labour, Canada, in co-operation with federal and provincial government agencies and other groups, June 1959, page 29.

[2] *Vocational Training Program in Canada*, Report No. 5, Department of Labour, Canada, co-operation with federal and provincial government agencies and other groups, June 1959.

Various other facilities were mentioned by the respondents in their opinions on needed community improvements. The most frequently mentioned was the telephone; a total of 19 respondents suggested the need of telephones in their community, and most of these were located in areas II and III. Other facilities mentioned were medical services, community halls, fire equipment, and transportation to and from the Island.

Forty-eight of the 70 respondents who referred to social conditions thought that what was needed to improve their community was more farmers. They suggested that people should be helped to get established on the vacant farms in the area, "young people should be encouraged to remain on farms"; electricity should be introduced and roads improved in an effort to encourage people to stay on farms. Twelve respondents suggested that there should be more entertainment facilities, such as theatres and social clubs. Ten respondents thought that the required improvements in their communities could be brought about by the people concerned. They suggested that people adopt a more aggressive approach to the social affairs of the community, and that some trained leadership be made available by the government.

As is indicated in Table 11, more than one-fifth (62) of the respondents thought their communities could be improved by improving conditions on the farms themselves. Higher farm income was suggested as the chief requirement; it should be brought about by government action in supporting farm product prices and in the area of marketing. More credit at more lenient terms would help already established farmers and young people who wish to start farming and farmers should also be assisted in obtaining hired labor. Respondents were concerned also about the high cost of machinery and suggested that the farmers themselves lower these costs by way of sharing or co-operative use of machinery. Other farmers suggested that what their community needed was improved agricultural policies or programs.

Twenty-one respondents, all on commercial farms, expressed the opinion that greater activity in farm organizations would be a means toward improving conditions in their communities. This was expressed in terms such as "more support should be given to Junior farm organizations", "farmers should be more interested in farm organizations" and in co-operative movements. Related to this is the suggestion of 15 other respondents that "more trained farm leadership" should be made available to farmers, by the government, through its extension personnel.

Sixteen respondents said that their communities should improve the general appearance of their homes and farmsteads. Eighteen of the respondents (one or more in each area) had entered the Rural Beautification contest at some time during the past, and 238 others indicated by their statements that they knew the general purposes of the contest.

One or two of the respondents in each area suggested that making non-farm work available within their community would be an improvement. This was expressed in terms as "we need more winter employment", and greater efforts should be made at "promoting industry in this area". Twenty-four respondents were satisfied with existing conditions in their communities.

FARM FAMILIES AS CONSUMERS OF HOME AND FARM LABOR-SAVING EQUIPMENT

HELEN C. ABELL

In the economic life of any nation farmers and their families perform the essential role of primary producers of food and fibre.

In Canada where farming has long passed the subsistence stage, farm families as well as urban families play an important role as consumers of the many processed and manufactured goods which form the material basis for our nation's relatively high level of living.

The farm family must also devote a large part of its purchasing power to machinery and equipment essential to farm business operations.

As part of a special study of 352 Ontario Farm Homes and Homemakers, data were collected which permitted the calculation of the appropriate value of all major items of labor-saving farm equipment and machinery and of household appliances and equipment owned by these farm families in July 1959[1].

The approximate value of all of this equipment for the 352 survey farms amounted to $3,670,869. The average value was $10,465 per farm. This value ranged from an investment as low as $450 on one farm to $25,930 on another.

Thus, of every $100 invested in labor-saving equipment on farms and in the farm homes about $87 had been spent as a part of the business of farming and $13 for family living facilities.

Because of the diversity in the size and nature of farm enterprises there is a considerable variation between farms in the investment in farm equipment and machinery. In our study this investment ranged from $100 to $24,500 per farm[2]. The average value was $9,063, the modal value $7,500 and the median value $8,500[3].

There was evidence of a more even distribution between farm homes in the investment in home equipment and appliances. About four in five homes had equipment valued between $1,000 and $2,000. The investment per home ranged from $398 to $3,012. The average value was $1,387 and both the median and modal values were $1,376.

The number and proportion of farm families, at varying levels of investment in each of these types of labor-saving equipment are shown in Table 1.

The number and proportion of families, at varying levels of investment in both home and labor-saving equipment, are shown in Table 2.

As already mentioned, for most families the proportional investment of each $100 invested in equipment was about $87 for farm equipment and $13 for home equipment. However, in some farm families this proportion was quite different. In about 18 of every 100 families the proportion invested in farm equipment was less than $80 with a correspondingly higher proportion of $20 or more invested in home equipment. At the other extreme, in about 25 of every 100 families the proportion invested in farm equipment was $90 or more with a correspondingly lower proportion of $10 or less invested in home equipment.

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[1] Estimated average dollar values for the farm equipment and machinery items were provided by the Farm Economics and Statistics Branch of the Ontario Department of Agriculture. Corresponding values for home equipment and appliance items were supplied by the Home Economics Service of the Ontario Department of Agriculture.

[2] One farm was in the process of changing owners at the time of the study. On this farm there were no major items of farm equipment or machinery still in the possession of the family.

[3] This average value of $9,063 for major items of farm equipment and machinery closely approximates the figure of $9,442 given for machinery on Canadian farms typed as "mixed crops and livestock, including dairy products" as found in Table 2, page 7 of Publication 1137, Nov. 1961, *"Farm Management Data from Illustration Station Farms 1953-1958"*, Experimental Farms Service, Canada Department of Agriculture.

The proportional investment in each of these two types of equipment was correlated with the calculated values of all items of this equipment. The general proportion of 87:13 was most commonly found among families with a total equipment investment ranging between $7,000 and $13,000. Among the

Table 1.—Calculated Investment in Major Items of Labor-saving Farm Machinery and Equipment and in Home Appliances and Equipment, 352 Ontario Farm Families, 1959

Farm machinery and equipment			Home appliances and equipment		
Dollars invested	Families		Dollars invested	Families	
	Number	Per cent		Number	Per cent
Nil	1	—	398 to 500	6	2
100 to 4,000	38	11	501 to 1,000	41	11
4,001 to 7,000	93	26	1,001 to 1,250	84	24
7,001 to 11,000	119	34	1,251 to 1,500	92	26
11,001 to 15,000	62	18	1,501 to 1,750	79	23
15,001 to 24,500	39	11	1,751 to 2,000	30	8
			3,001 to 3,012	20	6
Total	**352**	**100**	**Total**	**352**	**100**
Average per farm=$9,063			Average per farm home=$1,387		

Table 2.—Calculated Investment in Major Items of Labor-saving Equipment for Both Farm and Home, 352 Ontario Farm Families, 1959

Dollars invested	Number	Per cent
Less than 5,000	29	8
5,001 to 7,000	60	17
7,001 to 13,000	171	49
13,001 to 18,000	63	18
18,000 to 26,000	29	8
Total	**352**	**100**

Average investment=$10,465

APPENDIX

Table 1 (A).—Relationship Between Total Calculated Investment in Major Items of Labor-saving Home and Farm Equipment and Ratio of Investment in Farm Equipment and Machinery, 352 Ontario Farm Families, 1959

Total investment	Proportion of this investment in farm equipment					Total
	None up to 75 per cent	76 per cent to 80 per cent	81 per cent to 85 per cent	86 per cent to 90 per cent	91 per cent or more	
	— farm families —					
$5,000 or less	17	6	3	3	0	29
5,001 to 7,000	14	25	18	2	1	60
7,001 to 13,000	3	13	63	79	13	171
13,001 to 18,000	0	0	0	38	25	63
18,001 to 26,000	0	0	0	8	21	29
Total	**34**	**44**	**84**	**130**	**60**	**352**

Table 1(B).—Summary of Table 1(A)

Families with investment	Families with ratio of farm to total farm and home equipment investment							
	Proportionately more spent on home than farm (85 per cent or less on farm)		Approximately at general proportions of 87:13 (86 to 90 per cent on farm)		Proportionately more spent on farm than home (91 per cent or more on farm)		Total	
	No.	%	No.	%	No.	%	No.	%
Below average ($7,000 or less)	83	51	5	4	1	2	89	25
Average ($7,001 to 13,000)	79	49	79	61	13	22	171	49
Above average ($13,001 to 26,000)	0	0	46	35	46	76	92	26
Total	**162**	**100**	**130**	**100**	**60**	**100**	**352**	**100**

families with a total investment of less than $7,000 the proportion was nearer 80:20 and among families with an investment above $13,000 it was 90 or more for farm equipment to 10 or less for home equipment[1].

Expenditures for home equipment are much less elastic than those for farm equipment, as revealed by the fact that the lower the level of total expenditure for labor-saving home and farm equipment the higher was the proportion of this expenditure for home equipment. It has long been observed that farming is predominantly a family enterprise and hence expenditures for farm family living and farm production automatically compete for shares of family budgets[2].

From this study of Ontario farm families it would seem that this need to choose between expenditures for farm labor-saving equipment or for home labor-saving equipment is still very real for at least one family in every five.

To some extent consumer education efforts can help these families in making necessary choices. However, special efforts aimed at increasing income levels for these families would seem to be more pertinent. These efforts might be aimed at measures such as changing production and/or marketing practices, encouraging and providing training and employment in non-farm work for certain family members as well as educational programs of farm and home management.

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[1] Supporting data for these findings are found in Tables 1(A) and 1(B) of the Appendix.

[2] See *Elasticities of Expenditures for Family Living Farm Production and Savings, United States, 1946,* by T. Wilson Longmore and Carl C. Taylor in *Journal of Farm Economics,* Vol. XXXIII, No. 1, Feb. 1951.

COST OF PRODUCING POTATOES ON SELECTED NEW BRUNSWICK FARMS IN 1959

G. C. RETSON

Information on the cost of producing potatoes was collected in 1960, as part of a broader study of the potato enterprise, on 31 New Brunswick farms.[1] These farms were located in the commercial potato growing areas of Carleton, Madawaska, Victoria, and York counties. The growers interviewed provided detailed information on the production and marketing of the 1959 crop. One may note, here, for a proper interpretation of the findings, that 1959 was a rather favorable year for the production of potatoes in the area surveyed. Yields were only one per cent below and prices 47 per cent above the average in the province as a whole for the previous ten years.

Acreage.—The potato acreage, on the 31 farms, ranged from five to 160 acres and averaged 38.2 acres per farm. The farmers were asked what they considered to be the best acreage for efficient production. Their answers varied, of course, but the average went as high as 50.5 acres; this is as much as 12.3 acres above the average acreage in potatoes on the 31 farms. As would be expected from these answers, as many as 21 growers planned to increase their potato acreage.

One would find it difficult, however, to assess the effect of an increase in acreage on the size of net returns. Many interrelationships must be considered. For example, a decline in labor requirements is likely to reduce costs provided it be not offset by a corresponding increase in wage rates. An increase in acreage followed by average or above-average yields will have differing effects depending on whether prices increase or decrease. Acreage, labor and other inputs as well as yield and prices all combine to determine the size of returns. Moreover, high returns in a given year, in a given area, encourage competition within and outside the area and, unless market demand increases accordingly, prices and returns are likely to decline.

Use of Land.—Land costs include the cost of the rented land and that part of the taxes and interest on investment which must be allocated to the potato acreage. Land values ranged from $30 to $100 and averaged $53 an acre. The somewhat higher charge for land use, on low cost than on medium and high cost farms (Table 2), is chiefly a reflection of the higher land values on low cost than on other farms.

The tax charge for the use of the land, which averaged $0.74 an acre, represents only part of the potato enterprise's share of the total farm tax bill. Taxes arising from assessment on buildings and machinery were included in the charges for the use of equipment and storage. Taxes exert a great influence on production costs in some areas of New Brunswick. However, they vary greatly, on a "per acre" basis, from farm to farm and from area to area. For the 31 farms included in our study, they ranged from $1.49 to $10.40 per crop acre. The operator with the highest production costs paid $468 in taxes; these taxes were levied on a farm covering 100 acres, 45 of which were in crops.

Labor.—The growers supplied us with a record of the time spent on the various operations required to produce and market the crop. With the exception of a small amount of custom work, seed cutting, and potato picking, which were charged to the enterprise on a cash basis, labor averaged 51 hours an acre or 0.4 hours a barrel. This labor included that of the operator and his family as well as that of the hired workers; when charged to the enterprise at an average rate of $0.75 an hour, it resulted in a charge of $38.39 an acre or $0.28 a barrel. Because of its importance, as an element of cost, we have organized Table 3 to supply the reader with a detailed description of the labor required for various operations.

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[1] For details on that study, see Retson, G. C., "The Potato Enterprise on New Brunswick Farms", *The Economic Annalist,* August 1961. pp. 80-83.

Seed.—The growers used 11.9 barrels of seed an acre, on the average, and planted at the rate of about 10 barrels of cut seed an acre. Seed cutting (listed separately from custom work in Table 1) was generally hired done at a custom rate of 50 cents a barrel.

Potato prices were rising in the Spring of 1959 and charges for seed thus varied considerably. Some low cost operators purchased seed early in the year at prices ranging from $1.50 to $1.75 a barrel but one high cost grower paid as much as $8.00 a barrel for one lot of seed. About 46 per cent of the seed was purchased and the charge, for all seed used, averaged $2.66 a barrel.

Fertilizer.—Commercial fertilizer was applied at rates ranging from 1,600 to 2,500 pounds and averaging 2,054 pounds an acre. Seven different fertilizer mixtures were used, the most popular being 6-12-8. There was little variation in rates of application between high and low cost farms but the low operators purchased their fertilizer in greater volume and at slightly lower prices. Manure was applied at an average rate of 0.4 tons an acre. The low rate of application reflects the fact that only six of the 31 farms applied manure on potato land. As there was some difference of opinion among growers, as to its value on potatoes, no charge was made for manure. The enterprise, however, was charged for the labor and equipment used in loading, hauling, and applying the manure. Because of the residual value of manure, the charge was prorated on the basis of one-half of the labor and equipment cost for manure applied in the current year, one-third of the cost of that applied the previous year and one-sixth of the cost of that applied two years before on the potato land.

Spray.—Growers applied an average of eight pesticide sprays. On 80 per cent of the farms a killing spray was also applied before harvesting. There was little variation in number of sprays between high and low cost farms.

Table 1.—Cost of Producing Potatoes, 31 Selected Farms, New Brunswick, 1959-60

	Cost		Per cent of total
	Per acre	Per bbl.	
	—dollars—		
Seed	31.73	0.23	13.6
Seed cutting	5.08	0.04	2.2
Fertilizer	52.73	0.38	22.6
Spray	11.06	0.08	4.7
Tractor	21.25	0.15	9.1
Truck	4.67	0.03	2.0
Use of other equipment	16.65	0.12	7.1
Use of land	3.28	0.02	1.4
Picking	27.05	0.19	11.6
Custom work	2.59	0.02	1.1
Potato storage	12.98	0.09	5.6
Containers	2.69	0.02	1.2
Other	3.06	0.02	1.3
Labor (other than contract)	38.39	0.28	16.5
Total	**233.21**	**1.67**	**100.0**

Low cost farms purchased supplies in greater volume and had slightly lower spray costs per acre. Included in the item of spray is a small charge for materials used for weed control, treating seed, and disinfecting storage.

Picking.—Picking was hired done on a piece work basis at a cost of from 18 to 23 cents a barrel. As in the case of seed cutting, it is shown as a separate item and is not included in the charge for labor. The variation in picking costs, per acre, (Table 2) are largely attributable to differences in yields. The stoniness of many of the soils and the general availability of labor restricts the use of mechanical harvesters in some of the potato growing areas of New Brunswick.

Table 2.—The Relation of Cost of Production, per Barrel, to Various Aspects of Organization and Management of the Potato Enterprise, 31 Selected Farms, New Brunswick, 1959-60

	Low cost farms	Medium cost farms	High cost farms	All farms
Number of farms	10	11	10	31
Cost per barrel (dollars)	1.49	1.73	2.26	1.67
Acres in potatoes	59.6	35.1	20.1	38.2
Yield per acre (barrels)	151	132	117	139
Fertilizer per acre (pounds)	2,040	2,109	1,988	2,054
Number of sprays	8.7	9.2	8.1	8.7
Investment in potato equipment per acre (dollars)	59.48	85.08	112.90	76.91
Labor per acre (hours)	48.0	47.7	67.5	51.2
Receipts per acre (dollars)	490.12	400.32	394.43	444.56
Cost per acre—				
Seed and seed cutting	$ 37.14	33.41	42.43	36.81
Fertilizer	51.64	54.17	53.19	52.73
Spray	10.04	11.90	12.49	11.06
Use of machinery	37.66	43.57	55.22	42.57
Use of land	3.34	3.28	3.08	3.28
Picking	29.88	25.32	21.98	27.05
Storage	11.18	13.91	16.51	12.98
Labor	35.97	35.77	50.61	38.39
Other	8.41	7.41	9.89	8.34
Total	**$ 225.26**	**228.74**	**265.40**	**233.21**
Enterprise returns per acre	$ 264.86	171.58	129.03	211.35

Table 3.—Labor Requirements for Various Operations, 31 Selected Potato Enterprises, New Brunswick, 1959

	Low cost farms	Medium cost farms	High cost farms	All farms
		—hours per acre—		
Operation—				
Plowing	1.3	1.3	1.7	1.4
Harrowing	0.9	0.8	1.1	0.9
Rock picking	2.4	1.8	3.9	2.5
Planting	2.8	3.9	4.1	3.4
Cultivating	1.8	2.3	2.7	2.1
Spraying	3.0	3.0	3.4	3.0
Roguing	0.4	0.8	2.3	0.9
Digging and hauling to storage	9.7	9.5	15.9	10.7
Grading and marketing	23.0	22.1	28.5	23.6
Repairing machinery	0.9	0.8	1.2	0.9
Other	1.8	1.4	2.7	1.8
Total	**48.0**	**47.7**	**67.5**	**51.2**

Storage.—Included in the charge for storage are rented storage and depreciation, interest, taxes, repairs and insurance on owned storage. Also included are operating costs such as electricity and fuel. Within the three cost groups storage charges varied considerably, reflecting the quality of storage facilities and the size of the crop in storage.

Use of Equipment.—Tractor, truck, and other equipment costs (shown separately in Table 1 and combined in Table 2) include charges for depreciation, interest, taxes, insurance and storage, as well as operating costs. The enterprise was charged for the use of general farm machinery used on potato operations as well as for specialized potato equipment. The variation in charges, for use of equipment, (Table 2) reflects the relative level of investment in equipment, per acre, on low, medium and high cost farms.

Cost of Production.—The total cost of producing potatoes on the 31 farms averaged $233 an acre or $1.67 per 165-lb. barrel. The cost per barrel was computed on a field-run yield basis. Assuming that potatoes held for seed or home use were the equivalent of those sold for seed or table stock, the cost of production averaged $1.82 per barrel of marketable potatoes. Included in this cost were storage, grading and delivery charges.

Table 1 lists the various items of cost, on a "per acre" and on a "per barrel" basis, and gives the percentage which each item represents of the total cost of producing potatoes. To provide some description of farm-to-farm variations in costs and returns, and of the relation between these costs and returns and various aspects of enterprise organization and management, the farms were then subdivided, in Table 2, in three groups, namely, low, medium and high cost farms.

Low production costs and high returns were associated with above-average ratings in size of enterprise, yield per acre, and efficiency in the use of labor.

PUBLICATIONS OF THE ECONOMICS DIVISION

Credit Unions in Canada, 1960. Heighton, V. A., Ottawa, September 1961. pp. 18.

This statistical report on credit unions' growth and activities in 1960 is divided into two parts. The first one deals with individual or local credit unions and the second with provincial central credit unions and the Canadian Co-operative Credit Society.

School Milk in Canada. Drayton, L. E., S. E. Kidd and D. W. Oke. Ottawa. December 1961. pp. iii + 33.

The production of dairy products, in Canada, exceeds its consumption, at current prices. As part of this pattern, the consumption of fluid milk is at about the levels prevailing during the 1930's and greatly below the levels of the immediate postwar period. This situation is giving great concern to the dairy industry.

The distribution of milk, through schools, is sometimes suggested as a means of increasing its consumption. The present report should help answer some, if not most, of the questions incidental to that method of distribution.

It brings forward the results of a study designed to provide information on (*a*) the prevalence of school milk programs, (*b*) the methods used to distribute milk through schools, (*c*) the quantity of milk consumed in schools in typical cities, (d) the factors which lead to the effectiveness of school milk programs, and (*e*) the benefits which arise from such programs.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Monthly Bulletin of Agricultural Economics and Statistics. Volume 10, No. 10, FAO, Rome. October 1961.

This issue of the Bulletin has an article on *Food Marketing Developments in Western Europe,* notes on *Grains and Cocoa in the European Economic Community,* and statistical tables on production, trade and prices for various farm products.

The State of Food and Agriculture, 1961. FAO, Rome. 1961. pp. viii + 177.

FAO's 1960-61 review of the state of food and agriculture deals chiefly with agricultural production, changes in stocks of agricultural products, economic activity and the demand for agricultural products, food supplies and consumption, farm prices and incomes, consumer prices, institutional agricultural credit, agricultural policies and development plans, and the short-term outlook for agriculture.

The review itself is followed by two chapters that are concerned with some of the most important problems in agricultural development. One chapter reviews and appraises the agrarian reform policies which have been enacted in recent years and the other reviews the developments which have occurred, since 1945, in agricultural extension, education and research services in Africa, Asia and Latin America.

OTHER PUBLICATIONS

Ontario Farm Management and Accounting Report, 1960—All Types of Farms. Publication 315, Ontario Department of Agriculture. Toronto. August 1961. pp. 29.

"The farm management and accounting project, a joint project of the Department of Agricultural Economics, Ontario Agricultural College, and the Farm Economics and Statistics Branch, Ontario Department of Agriculture, was started in 1946 by the former institution with fewer than 50 records. Since that time the number of records analysed has steadily increased, with the result that in the early part of 1961, 548 farmers sent completed account books to the Ontario Agricultural College for summary and analysis by the joint staffs of the two departments, who share the responsibility for the project."

The present report is an "overall report for all completed records for the year 1960." Section A deals with Ontario Farm Business—1960, under the following subheadings: *General Farm Economic Conditions,* and *Labour Incomes of Farms in Accounting Projects.* Section B deals with *Receipts, Expenses and Labour Incomes of Eight Types of Farms—1960* and Section C with *Important Factors Affecting Profit.*

Significant Tables from 1,222 Dairy Cost Records, Ontario D.H.I.A., 1959-1960. Farm Economics and Statistics Branch in co-operation with Livestock Branch, Ontario Department of Agriculture, Toronto. 1961. pp. 30.

A report which "contains over 50 significant tables selected to illustrate some dairy management practice."

Canada 1961, The Official Handbook of Present Conditions and Recent Progress. Prepared by the Information Service Division, Dominion Bureau of Statistics. The Queen's Printer, Ottawa, 1961.

An illustrated handbook which provides an annual survey of the Canadian economy and information on recent economic, social and cultural developments.

1960 Saskatchewan Farm Business Summary of 42 Farm Management Clubs, 382 Club Members. McRorie, H. D., J. K. Gronsdahl, J. F. Hickie, J. L. Drew and G. E. Lee. Extension Report No. 3. Regina, Saskatchewan.

Part 1. July 1961. pp. 39.
Part 2. August 1961. pp. 43.

Part 1 is concerned with the over-all performance of the farms. The farm capital and the labor force are divided into their respective components to supply a measure of the various investment relationships and of efficiency in the use of labor.

Part 2 classifies farms according to size and type and supplies a detailed analysis of cost and income. Its purpose is to establish bench mark levels of the main types of investments, costs, and returns.

Grain Corn Costs of Production Study. Report on 1960 Results. Dorling, M. J. Department of Agricultural Economics, Ontario Agricultural College. Guelph, Ontario. September 1961. pp. 8 + Tables, Charts and Appendix.

A report on a research project sponsored jointly by the Canada Department of Agricultural Economics of the O.A.C. It is chiefly concerned with corn yields and costs of producing corn for a stratified random sample of 124 farms, in 1960, in the counties of Essex, Kent, and Lambton.

Grain Corn Acreages and Production in Ontario in Recent Years. Dorling, M. J. Department of Agricultural Economics, Ontario Agricultural College. Guelph, Ontario. September 1961. pp. 21 + Appendix.

A report on trends in the production of corn, in Ontario, and of competitive crops, namely soybeans, oats, mixed grains, winter wheat, and dry beans. This report brings together some of the results of a research project sponsored jointly by the Canada Department of Agriculture (Extra Mural Research Project 104) and the Department of Agricultural Economics of the O.A.C.

Report on Ontario Hog Contracts. Department of Agricultural Economics, Ontario Agricultural College. Guelph, Ontario. September 1961. pp. 4.

The first part of the report deals with *Hog Feeding Contracts—Credit Contracts, Flat Fee Contracts, Flat Fee plus Incentive Contracts,* and *The Security Required for Credit.* Part II is concerned with *Weanling Production Contracts—Guaranteed Price of Weanling Pigs, Guaranteed Price of Weanling plus Credit Arrangements, Lease Type Contract, Flat Fee Type* and *Incentive Weanling Contracts, Length of Time Period of the Contract,* and *Changes in Management Decision Rights.*

Broiler Contracts in Ontario. Trant, G. I. and J. H. Nurse. Department of Agricultural Economics, Ontario Agricultural College. Guelph, Ontario. September 1961. pp. 10.

The authors have organized their review and analysis under the following headings: *Extent of Contracts and Changes in Plant Capacity; Types of Growers; Duration of Agreements; Premiums; Types of Payment Schemes; Prices Received by Growers; Prices Paid by Growers for Feed and Chicks;* and *Profits.*

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
A. H. TURNER, Director

APRIL 1962 Vol. XXXII No. 2

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Published by Authority of the Honourable Alvin Hamilton
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Year and Month	General Whole-sale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricul-tural Products	Prices of Com-modities and Services used by Farmers		Consumer Price		Indus-trial Produc-tion
		Total	Field	Animal		Com-posite[a]	Equip-ment and Materials[b]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	222.5	180.9	264.1	244.6	276.7	222.7	128.0	122.2	167.6
1961	233.3	219.6	169.1	270.0	245.6	281.0	226.7	129.2	124.0	172.5
1961										
Jan.	231.3	223.3	169.6	277.1	248.4	271.8	223.5	129.2	124.4	165.8
Feb.	231.6	222.8	169.2	276.3	249.1	....	....	128.9	124.0	166.3
Mar.	231.3	218.5	168.4	268.6	246.8	....	....	129.1	124.0	165.5
April	230.9	215.2	168.7	261.7	242.7	283.4	226.6	129.1	123.9	168.5
May	231.3	216.0	167.6	264.4	241.6	....	....	129.0	123.2	169.1
June	231.4	218.7	172.8	264.7	244.1	....	....	129.0	123.5	172.7
July	234.5	218.4	171.5	265.3	244.4	....	....	129.0	124.9	172.5
Aug.	234.5	214.0	162.6	265.4	244.6	287.8	230.0	129.1	125.2	175.4
Sept.	235.3	216.0	159.8	272.3	247.1	....	....	129.1	123.2	177.4
Oct.	235.3	217.3	159.3	275.3	245.7	....	....	129.2	123.3	177.2
Nov.	235.3	216.6	158.2	275.0	245.9	....	....	129.7	123.6	179.2
Dec.	236.5	217.0	159.8	274.2	247.0	....	....	129.8	124.5	180.7
1962										
Jan.	237.0	218.9	166.7	271.0	247.4	....	....	129.7	124.8	178.6
Feb.	237.2	219.2	167.5	270.8	246.6	....	....	129.8	125.0	....
Mar.	237.1	217.3	167.1	267.5	....	....	....	129.7	124.4	....

Note:—See earlier editions for index numbers previous to 1926.
Source:—Dominion Bureau of Statistics, Ottawa.

[a] Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

[b] Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Economic Growth.—Commenting on the problems of a growing economy, the Governor of the Bank of Canada said, in his annual report for 1961:

> "Over the years a growing economy needs a growing stock of money, and this need can, in my judgment, best be met by a flexible monetary policy which permits the money supply to change at different rates in different periods so that it makes a contribution to achieving credit conditions which are appropriate to changing economic circumstances. I believe that the monetary expansion that occurred in the second half of 1961 was appropriate in the circumstances of the time and that it was of material assistance in maintaining credit conditions in Canada which encouraged and sustained this phase of economic expansion. Without it, credit would have been less readily available and its cost would have been greater, and the desired growth in spending on goods and services in Canada would have been retarded. Moreover, the easing in credit conditions in Canada relative to those in the United States helped in removing the upward pressure on the foreign exchange value of the Canadian dollar and facilitated the movement of the exchange rate to a more appropriate level.
>
> By improving the international competitive position of Canadian industry, the recent decline in the exchange value of the Canadian dollar provides our economy with a special opportunity to attack the major problems of adjustment that have confronted us since the intense resource development boom came to an end several years ago. If full advantage is to be taken of the present opportunity to achieve a significant increase in output and employment in the exporting industries and in import-competing industries, it is clearly essential that a fresh upward thrust of domestic prices and costs should be avoided and that all sectors of the economy should actively seek out and vigorously exploit the opportunities for new business now available."

Population.—Canada's population reached the 18,238,247 figure on June 1, 1961 according to the final count of the 1961 census. Population increased by 4.2 million or 30 per cent since the 1951 census; the increase was 2.1 million or 19 per cent in the preceding 1941-51 decade.

The gain in the 1951-61 decade was very evenly distributed between the two five-year periods—2,071,362 in 1951-56 and 2,157,456 in 1956-61. The rate of growth, however, was slightly lower in the 1956-61 than in the 1951-56 period, amounting to 13.4 per cent in the former and 14.8 per cent in the latter period.

Population numbers and percentage increases, for Canada as a whole and by province or territory, were as follows:

	Population by provinces			Percentage increases		
	1961	1956	1951	1951–61	1956–61	1951–56
Canada	**18,238,247**	**16,080,791**	**14,009,429**	**30.2**	**13.4**	**14.8**
Newfoundland	457,853	415,074	361,416	26.7	10.3	14.8
Prince Edward Island	104,629	99,285	98,429	6.3	5.4	0.9
Nova Scotia	737,007	694,717	642,584	14.7	6.1	8.1
New Brunswick	597,936	554,616	515,697	15.9	7.8	7.5
Quebec	5,259,211	4,628,378	4,055,681	29.7	13.6	14.1
Ontario	6,236,092	5,404,933	4,597,542	35.6	15.4	17.6
Manitoba	921,686	850,040	776,541	18.7	8.4	9.5
Saskatchewan	925,181	880,665	831,728	11.2	5.0	5.9
Alberta	1,331,944	1,123,116	939,501	41.8	18.6	19.5
British Columbia	1,629,082	1,398,464	1,165,210	39.8	16.5	20.0
Yukon	14,628	12,190	9,096	60.8	20.0	34.0
Northwest Territories	22,998	19,313	16,004	43.7	19.1	20.7

Investment.—A recent survey made by the Department of Trade and Commerce shows that present plans for capital spending by all sectors of the Canadian economy call for total outlays of $8.6 billion in 1962. These outlays would exceed those of 1961 by six per cent. Outlays for construction are expected to be about five per cent higher and the value of machinery purchases eight per cent higher. A continuing high proportion of Canada's gross national product is thus being devoted to the expansion, modernization, and renewal of her productive facilities.

Imports.—Preliminary figures released by the Dominion Bureau of Statistics indicate that commodity imports into Canada reached a new record value, for the month of January, of $493 million in January 1962. Commodity imports rose 14.3 per cent from $431.2 million in January 1961 and 9.2 per cent from the previous January peak of $451.6 million in 1957. Part of the higher value reflects the difference in the exchange value of the Canadian dollar. The January 1962 total also includes $12.6 million for imports of military aircraft from the United States, financed under mutual defence arrangements.

Consumer Prices.—Canada's consumer price index rose only slightly from 129.7 in January to 129.8 in February. Increases occurred in the food, clothing, transportation, health and personal care, and recreation and reading components; decreases in the tobacco and alcohol component; and the housing component remained steady.

Farm Prices.—The index of farm prices of agricultural products (1935-39 = 100) declined from 248.2 in January 1961 to 242.8 in December 1961 and then rose to 243.0 in January 1962. In January 1962, slight increases in the prices of grains and livestock and a larger increase in the price of potatoes offset a big reduction in egg prices.

Farm Income.—Total farm net income in Canada, in 1961, including changes in farm inventories of grains and livestock is estimated at $1,006.0 million. This total is about 24 per cent below the revised estimate of $1,319.6 million for 1960 and the lowest since 1957 when it was estimated at $1,058.3 million.

Farm operating expenses continued to rise but most of the decline in farm net income, in 1961 from 1960, can be attributed to the reduction in the production of Prairie grain crops in 1961 and the resultant drop in the year-end inventories of grain on farms. Realized farm net income, which excludes the effects of inventory changes, was estimated at $1,313.2 million, or $10 million above the revised figure for 1960 and 2.4 per cent above the average of $1,282.7 million for the 1956-60 five-year period.

Farm cash income reached an all-time high of $2,928.9 million in 1961, exceeding the previous record of $2,589.1 million in 1952 by 2.4 per cent and the $2,781.5 million realized in 1960 by 5.3 per cent. Major contributions to the increase in cash farm income between 1960 and 1961 were higher returns from sales of wheat, flaxseed, tobacco, cattle, calves, hogs, dairy and poultry products, and increased Canadian Wheat Board participation payments.

In 1961, farm net income rose only in Quebec, Ontario and British Columbia. Owing to large declines in year-end farm inventories of grain in the three Prairie provinces total farm net income in those provinces declined appreciably; realized income, however, remained at the same level in Manitoba and was higher in Saskatchewan and Alberta. Much lower returns from sales of potatoes in Prince Edward Island and New Brunswick greatly contributed to the decline in both realized and total farm net income in those two provinces.

CORRECTIONS

Page 9 of the February 1962 issue:

(a) in Table 6, read "Lack of farm labor" instead of "Lack other farm labor" in box head of column 4.

(b) in Table 7, under "No opinion," for Area I, read "22" instead of "2".

TRENDS IN FOOD CONSUMPTION IN CANADA, 1951-60

S. E. KIDD

The pattern of per capita food consumption in Canada has changed significantly in the last decade. There has been an increase in the consumption of meat, poultry, eggs, fruit, and vegetables. The consumption of dairy products, oils and fats, and sugars and syrups has remained relatively constant, while that of cereals and dried legumes has fallen sharply.

Dairy Products.—The consumption of fluid milk and cream in Canada has averaged about 392 pounds per person, annually, between 1951 and 1960. The rate of consumption has fluctuated between 382 pounds and 405 pounds per person but, despite such changes, no trend is discernible. On the other hand, the consumption of fluid milk by-products, particularly skim milk, has increased steadily.

The consumption of creamery butter was relatively stable at between 19.0 and 19.5 pounds per person between 1951 and 1957 but has since declined to only 16.2 pounds in 1960.

Total cheese consumption rose from 5.71 pounds in 1951 to 7.29 pounds per person in 1960, as cheddar, processed and cottage cheese consumption all increased slightly.

The domestic disappearance of powdered skim milk almost doubled, rising from 3.72 pounds to 6.55 pounds.

Evaporated whole milk consumption was relatively steady at about 18 pounds per person annually.

The domestic disappearance of ice cream increased from 9.96 pounds per person to 12.65 pounds.

Meat.—The consumption of meat in Canada has risen from 127.1 pounds per person in 1951 to 147.6 pounds in 1960, an increase of more than 20 pounds. Beef consumption rose from 49.3 to 74.8 pounds between 1951 and 1957 while pork consumption fell from 58.6 to 46.2 pounds. Since 1958, the consumption of beef has fallen to 69.2 pounds while that of pork has risen to 55.2 pounds per person. Thus, these products are substituted for each other. Together, they have made up between 84 and 86 per cent of Canadian meat consumption annually, and so have accounted for the greater part of the increase in total meat consumption in the last decade.

Table 1.—Consumption of Dairy Products in Canada, 1951-60

	Milk and cream (as milk)[a]	Fluid milk by-products[b]	Creamery butter	Total cheese[c]	Powdered	Evaporated	Ice cream
					Skim milk	Whole milk	
	— pounds per person —						
1951	384.14	10.19	19.2	5.71	3.72	17.86	9.96
1952	381.80	10.93	19.0	5.82	3.51	18.33	10.34
1953	387.01	11.47	19.2	6.18	4.41	18.52	10.62
1954	388.27	11.47	19.2	6.39	4.69	18.05	10.28
1955	396.32	13.05	19.2	6.66	5.13	18.37	11.33
1956	405.10	13.72	19.5	6.43	5.08	18.64	11.33
1957	400.17	14.42	19.4	6.77	5.43	18.23	11.66
1958	396.08	14.39	18.3	6.86	6.43	17.73	11.77
1959	393.46	15.20	17.4	7.00	6.95	17.25	12.60
1960	391.84	15.18	16.2	7.29	6.55	17.56	12.65

[a] Includes milk equivalent of cream, and special, standard, and two per cent milk. Data for 1951–55 are unpublished revised data supplied by the Dominion Bureau of Statistics.

[b] Includes fluid skim milk, chocolate drink, and buttermilk.

[c] Includes cheddar as such, process and other whole milk and cream cheese as such.

SOURCE: Data supplied by the Agriculture Division, Dominion Bureau of Statistics.

Table 2.—Consumption of Meat, Poultry, and Eggs in Canada, 1951-60

	Meats				Eviscerated poultry			
	Beef	Pork	Beef and pork	Total meats[a]	Fowl and chickens	Turkey	Total[b] poultry	Eggs
	— pounds per person —				— pounds per person —			—dozen—
1951	49.3	58.6	107.9	127.1	15.0	2.6	18.0	20.0
1952	54.4	56.0	110.4	130.0	17.9	3.4	21.7	22.2
1953	65.1	48.7	113.8	133.3	15.9	3.5	19.8	22.9
1954	70.2	45.4	115.6	136.0	16.6	4.7	21.7	23.9
1955	69.1	49.2	118.3	139.1	18.9	5.0	24.3	24.0
1956	72.0	49.5	121.5	143.3	19.2	6.0	25.6	24.3
1957	74.8	46.2	121.0	143.1	19.4	6.1	26.0	25.4
1958	64.8	51.7	116.5	138.4	21.1	6.0	27.6	24.8
1959	64.4	58.4	122.8	142.6	22.0	7.9	30.4	24.0
1960	69.2	55.2	124.4	147.6	20.9	6.4	27.8	24.0

[a] Total of beef, pork, veal, mutton and lamb, offal and canned meats.
[b] Total of fowl and chicken, turkey, goose and duck.
Source: Agriculture Division, D.B.S.

Veal consumption has been fluctuating between seven and nine pounds per person while that of mutton and lamb has risen from 2.0 to 3.2 pounds per person between 1951 and 1960. Offal and canned meat have each been consumed at an average rate of about five pounds per person annually.

Poultry and Eggs.—The consumption of eviscerated poultry averaged about 20 pounds per person between 1951 and 1955 but rose to an average of more than 27 pounds per person in the second half of the decade. Fowl and chicken consumption rose from 15.0 to 20.9 pounds per person and the consumption of turkey rose from 2.6 to 6.4 pounds between 1951 and 1960. Goose and duck remain relatively unimportant in the Canadian diet.

Egg consumption rose from about 20 dozen in 1951 to about 24 dozen by the mid-fifties and stabilized at that level.

Fish.—In the 1953-58 period, fish was consumed at the rate of about 13.5 pounds per person annually.

Oils and Fats.—The total consumption of edible oils and fats in Canada has remained relatively steady at about 50 pounds per person annually between 1951 and 1960, but important changes have occurred in the consumption

Table 3.—Consumption of Oils and Fats in Canada, 1951-60

	Total butter	Margarine	Lard	Shortening	Salad and cooking oils	Total oils and fats
	— pounds per person —					
1951	22.6	7.4	8.1	8.2	2.4	48.7
1952	20.8	7.7	9.4	8.3	2.7	48.9
1953	20.9	7.5	8.4	9.2	2.5	48.5
1954	20.7	7.6	8.3	10.2	2.9	49.7
1955	20.6	8.1	8.7	9.7	2.4	49.5
1956	20.5	7.7	7.4	9.7	2.7	48.0
1957	20.3	7.8	7.4	9.2	2.9	47.6
1958	19.1	8.5	7.0	9.6	3.2	47.4
1959	18.1	8.7	10.3	9.2	3.7	50.0
1960	16.9	9.3	9.4	9.4	4.1	49.1

Source: Agriculture Division, D.B.S.

of the individual products in this group. In the 1951-57 period the consumption of all types of butter averaged 21.1 pounds while that of margarine averaged 7.7 pounds. Butter consumption has since declined to 16.9 pounds in 1960 while margarine consumption has risen to 9.3 pounds.

Lard consumption has fluctuated between 7.0 and 10.3 pounds and shortening between 8.2 and 10.2 pounds per person. However, these fluctuations have occurred because lard and shortening are good substitutes for each other. Their combined consumption has been relatively stable.

Salad and cooking oils have shown an increase in consumption of 1.7 pounds, rising from 2.4 to 4.1 pounds.

Cereals.—Wheat flour, which is by far the most important cereal consumed in Canada, has registered a decline in consumption of more than 16 pounds, falling from 151.8 pounds in 1951 to 135.6 pounds in 1960. The consumption of breakfast food has remained relatively steady at about seven pounds, as has the rate of consumption of rice at about four or five pounds. Oatmeal and rolled oats consumption has fallen from over six pounds per person to 4.9 pounds. The consumption of rye flour has risen steadily from 0.3 to 1.1 pounds and that of corn flour and meal has risen from 0.8 pounds in 1951 to 1.7 pounds in 1960. Pot and pearl barley, buckwheat flour, and soybean flour are together consumed at a rate of less than one pound per person annually.

Table 4.—Consumption of Cereals in Canada, 1951-60

	Wheat flour	Oatmeal and rolled oats	Rice	Breakfast food	Total cereals
	— pounds per person —				
1951	151.8	6.3	4.8	7.1	171.5
1952	150.9	5.5	3.0	6.4	167.5
1953	144.2	5.2	4.1	6.6	162.3
1954	145.9	5.7	4.6	7.2	166.1
1955	142.5	4.8	4.5	6.3	161.0
1956	144.3	5.4	5.1	6.7	163.4
1957	137.9	5.2	4.3	6.2	155.6
1958	141.7	4.9	4.4	6.7	160.2
1959	135.0	4.9	4.0	6.6	153.2
1960	135.6	4.9	4.5	6.9	155.0

Source: Agriculture Division, D.B.S.

Vegetables.—The consumption of fresh vegetables was relatively steady at about 70 pounds per person annually between 1951 and 1957, but has since risen to 87.4 pounds in 1960.[1] Canned vegetables have been consumed at the rate of almost 20 pounds per person each year. Frozen vegetable consumption, while not making an important contribution to total vegetable disposition, has nevertheless increased from only 0.6 pounds in 1951 to 1.5 pounds in 1960.

Potato consumption fluctuated between 138.6 and 161.1 pounds in the 1951-59 period and averaged almost 150 pounds per person.

Citrus Fruit.—The domestic disappearance of fresh citrus fruit in Canada has fluctuated between 28.8 and 39.0 pounds per person annually between 1951 and 1960 and appears to have declined slightly in the second half of

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[1] This increase may be associated to some extent with the more complete statistical coverage of Canadian vegetable production in recent years.

Table 5.—Consumption of Vegetables in Canada, 1951-60

	Vegetables			White potatoes
	Fresh	Canned	Frozen	
	— pounds per person —			
1951	69.3	18.7	0.6	143.3
1952	71.0	18.4	0.8	146.8
1953	70.1	18.8	1.1	155.9
1954	71.4	18.8	1.4	146.3
1955	70.5	19.3	1.7	148.5
1956	70.6	20.0	2.1	153.3
1957	69.3	19.8	2.0	161.1
1958	76.4	17.9	2.1	145.4
1959	78.1	17.8	1.8	138.6
1960	87.4	17.3	1.5	170.0[a]

[a] The estimates of potato yield were revised upward in 1960, and thus this figure is not consistent with the series.
Source: Agriculture Division, D.B.S.

Table 6.—Consumption of Fruit in Canada, 1951-60

	Fruit other than citrus				Citrus		Tomatoes		
	Fresh	Canned	Frozen	Juice	Fresh	Juice	Fresh	Canned	Juice
	— pounds per person —								
1951	61.6	11.7	0.4	3.9	34.5	6.9	19.3	6.9	7.7
1952	68.1	12.6	0.5	4.2	37.5	9.2	18.7	6.1	6.3
1953	62.2	14.3	1.0	4.0	39.0	10.6	20.0	6.0	8.3
1954	59.0	15.4	1.2	4.4	38.5	10.8	19.4	6.7	9.6
1955	70.7	14.9	1.2	4.5	36.9	13.6	19.0	5.7	9.1
1956	70.0	16.2	1.6	5.3	36.1	14.6	18.3	6.2	9.8
1957	63.4	14.5	1.6	4.6	35.5	15.9	15.3	5.7	9.2
1958	67.0	15.6	2.1	5.3	28.8	14.6	17.2	5.7	9.2
1959	71.2	16.0	2.3	5.6	34.5	16.0	18.1	5.5	10.1
1960	66.2	16.2	2.5	6.1	31.8	16.6	17.6	5.6	10.0

Source: Agriculture Division, D.B.S.

Table 7.—Consumption of Pulses and Nuts, Sugar, and Coffee and Tea in Canada, 1951-60

	Dry beans	Dry peas	Shelled peanuts and tree nuts	Refined sugar	Coffee (green beans)	Tea
	— pounds per person —					
1951	4.9	1.8	3.8	96.3	6.3	3.0
1952	3.3	1.5	3.8	97.7	6.8	3.2
1953	3.3	2.0	4.1	96.6	7.2	3.1
1954	2.7	1.4	4.3	96.3	6.7	2.9
1955	3.5	1.5	4.2	99.0	7.4	2.7
1956	3.6	2.2	4.4	99.3	8.1	2.8
1957	3.1	1.8	4.3	93.6	8.4	2.8
1958	3.2	1.3	3.9	97.6	8.6	2.6
1959	2.9	1.1	4.3	98.3	9.4	2.6
1960	2.9	1.2	4.2	93.0	9.0	2.4

Source: Agriculture Division, D.B.S.

the decade. On the other hand, citrus juices have shown a remarkable increase, rising steadily from only 6.9 pounds in 1951 to 16.6 pounds in 1960. This is due principally to the introduction of frozen concentrated citrus juices.

Tomatoes.—The consumption of fresh tomatoes has averaged about 18 pounds per person annually between 1951 and 1960. The domestic disappearance of canned tomatoes declined from 6.9 to 5.6 pounds per person in this period, but this slight decline was more than balanced by an increase in the consumption of tomato juice from 7.7 to 10.0 pounds per person.

Other Fruit.—The annual domestic disappearance of fresh fruit in Canada has varied from about 60 to 70 pounds per person between 1951 and 1960, without any apparent trend. However, the consumption rates of canned fruit, frozen fruit and fruit juices have increased significantly. Canned fruit consumption has risen 4.5 pounds per person, from 11.7 pounds in 1951 to 16.2 pounds in 1960. Almost all types of canned fruit have shown slight increases in this period. Frozen fruit consumption has increased from only 0.4 pounds in 1951 to 2.5 pounds in 1960. Fruit juice consumption has risen from 3.9 pounds in 1951 to 6.1 pounds in 1960.

Dried fruit consumption has been stable at about six pounds per person annually.

Pulses, Nuts, and Cocoa.—The domestic disappearance of dry beans and dry peas has declined in the last decade. Dry bean consumption fell from 4.9 pounds in 1951 to 2.9 pounds in 1960 and dry peas declined from 1.8 to 1.2 pounds per person in the same period.

Peanut and tree nut consumption rates have varied little from their averages of 2.9 pounds and 1.2 pounds per person respectively between 1951 and 1960. Cocoa bean consumption has averaged about three pounds per person annually.

Sugars and Syrups.—Refined sugar consumption has averaged about 97 pounds per person from 1951 to 1960. Maple sugar has been consumed at a rate of less than one pound per person since 1953.

Coffee and Tea.—Coffee consumption has increased from 6.3 pounds per person in 1951 to 9.0 pounds in 1960. This trend has been accompanied by a decline in tea consumption from 3.0 pounds in 1951 to 2.4 pounds in 1960.

RESOURCES MINISTERS COUNCIL

A Resources Ministers Council was decided on at the final meeting of the "Resources for Tomorrow" Steering Committee, at Ottawa, on February 5, 1962.

The Council will include a federal cabinet minister and one minister from each of the provincial governments. As a co-ordinating agency, it will meet several times a year to consider plans and policies for the efficient management and development of renewable resources, recommended at the "Resources for Tomorrow" conference which was held in Montreal in October 1961. All ministers, incidentally, have already taken steps to establish the technical committees that will serve the Council and co-ordinate the resource programs and policies of their respective governments.

The chairmanship will be rotated among the ministers, as a means of insuring a satisfactory co-ordination of resource development programs. The Council will meet for the first time in mid-September 1962 to discuss such matters as federal-provincial agreements relating to renewable resources and their relation to agricultural programs, the speedier application of the results of research, and the definition of long-term research and management goals.

SOME ASPECTS OF FARM ORGANIZATION ON MEDIUM TEXTURED SOILS OF THE DARK BROWN SOIL ZONE OF SASKATCHEWAN, 1959

M. RAGUSH

A continuing study of "Changes in Farm Organization" was started in 1954 in the Prairie Provinces. The Saskatchewan phase of this study in 1954 and again in 1959 concerned medium textured soils of the dark brown soil zone.

The 1954 sample consisted of small grain farms (two quarter sections), medium grain farms (one section), and large grain farms (six quarter sections and over). In 1959 the sample consisted of medium grain farms, medium grain-cattle farms, large grain farms, and large grain-cattle farms.

This article will describe farm organization and practices on the four size and type groups included in the 1959 study. Data on farm organization, income and expense, for the medium grain farms studied in 1954, are included in the tables. Significant differences between the medium grain farms studied in 1954 and 1959 are also described. Some of the difference in some of the budgetary items, in 1959 compared with 1954, is due to changing prices and price levels.

The 14 large grain farms studied in 1954 were much larger than the 21 studied in 1959. The large grain farms in the 1954 study averaged 1,400 acres in cropland, which is about 400 acres more than for the large grain farms in the 1959 study. In the latter study, the farms with six to nine quarter sections of land and 800 to 1,400 acres in cropland were considered to be typical of the large farms in the study area. Twenty-five per cent of the 581 farms in the study area were in this size range and 21 of these were used to study large grain farms and 22 to study large grain-cattle farms. The 16 medium grain farms sampled in 1954 were comparable in size and type with the 22 medium grain farms sampled in 1959.

The period covered by the studies was from "after harvest" 1953 and 1958 to "after harvest" 1954 and 1959, respectively. Receipts from grains in the 1954 study were for crops planted and harvested in 1954 and in the 1959 study for crops planted and harvested in 1959.

Farm Organization

Land Use.—The proportion of improved land of the total land area was high on all types and sizes of farms (Table 1). The proportion of improved land of the total land area was 96 per cent on medium grain farms, 86 per cent on medium grain-cattle farms, 91 per cent on large grain farms and 81 per cent on large grain-cattle farms. Wheat was the main crop on all farms, regardless of size and type. The acres in wheat of the total acres sown to grain was 84 per cent on medium grain farms, 72 per cent on medium grain-cattle farms, 86 per cent on large grain farms and 81 per cent on large grain-cattle farms. The acreage in flax was highest on grain farms and oats, improved pasture and hay on grain-cattle farms. The proportion of stubble crop of all crops was 20 per cent on medium grain farms, 23 per cent on medium grain-cattle farms, 19 per cent on large grain farms, and 23 per cent on large grain-cattle farms. The acreage in summerfallow ranged from 40 to 43 per cent of the cropland, on all sizes and types of farms.

Land use in 1954, between the two comparable groups of medium grain farms, was about the same except that a higher proportion of the seeded cropland was in stubble crops (33 per cent).

Table 1.—Land Utilization According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
	—average acres per farm—				
Wheat	336	290	522	242	436
Barley	....	17	23	23	15
Oats	12	12	5	32	44
Flax	2	23	49	11	8
Rye	....	....	....	2	4
Safflower	....	....	3	....	....
Tame forage and pasture	8	7	4	24	64
Summerfallow	240	269	463	249	415
Total cropland	598	618	1,069	583	986
Farmstead and unimproved	42	27	106	96	236
Total farm area	**640**	**645**	**1,175**	**679**	**1,222**
Number of farms	16	22	21	21	22

Livestock.—Hogs, sheep and poultry were of minor importance in the study area. Hogs averaged eight head per farm and only two farms had sheep. Poultry were used primarily for home consumption purposes. Cattle, however, were of considerable importance both from the standpoint of number of farms with cattle and the size of the enterprise. The summary of the 1959 reconnaissance survey (Table 2) which includes all farms in the study area, revealed that 375 farms, or 65 per cent of the 581 farms, had at least some cattle and the average number of cattle on the 375 farms was 26 head per farm. Indications were that cattle numbers had increased in the study area since 1954. Records of farms visited in 1954 and again in 1959 revealed that cattle numbers were about one-third higher in 1959.

Labor.—The farm family, including the operator, provided nearly all of the labor on medium farms. The medium grain farms and medium grain-cattle farms averaged only 10 and 2.5 days of hired labor respectively. The large

Table 2.—Number of Cattle According to Size of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1959

Quarter Sections	Number of cattle				
	No cattle	1–10	11–30	Over 30	All farms
	—number of farms—				
2 and under	43	18	11	9	81
3	30	25	27	6	88
4	47	30	40	9	126
5	27	7	21	19	74
6	15	7	22	22	66
7	13	8	14	13	48
8	13	5	6	6	30
9	3	3	2	7	14
10	5	3	3	3	14
11 and under	10	3	8	19	40
Number of farms	**206**	**108**	**154**	**113**	**581**
Per cent of farms	35	19	27	19	100

farms in 1959 averaged two months of hired labor. The large grain-cattle farms had 20 days more hired labor than the large grain farms. Hired labor was usually employed during seeding and harvesting.

Farm Capital.—The real estate value, including owned and rented land and buildings ranged from $31.97 to $33.87 per acre of cropland on the five groups of farms (Table 4). The medium grain farms in 1954 averaged $31.97 and the medium grain farms in 1959 averaged $32.37, or an increase of $0.40 per acre of cropland for the five-year period. The machinery investment per cultivated acre was $2.28 lower on the large grain farms than on the medium grain farms. All grain farms averaged $16.92 in machinery investment compared with $18.76 on all grain-catle farms, or a difference of $1.84 per cropland acre. Most of the additional investment in machinery on grain-cattle farms was in special haying equipment. The investment in machinery per acre of cropland on medium grain farms decreased by $0.72 to $18.30 from 1954 to 1959.

Income-Expense Summary

Crop Yields.—There was a wide difference in yields of grain between the crop years 1954 and 1959. Wheat averaged 3.3 bushels per seeded acre for all

Table 3.—Amount of Labor Used on Farms According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
	—average months per farm—				
Hired labor	0.4	0.4	1.6	0.1	2.4
Unpaid family labor	....	0.9	0.3	2.1	1.0
Operator	7.9	10.2	8.3	12.0	12.3
Total	**8.3**	**11.5**	**10.2**	**14.2**	**15.7**
Man equivalent	0.7	1.0	0.9	1.2	1.3
Number of farms	16	22	21	21	22

Table 4.—Average Farm Capital According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
	—average dollars per farm—				
Land	17,180	16,550	30,180	16,490	27,737
Buildings	1,905	3,455	4,870	3,258	5,415
Machinery and equipment	11,394	11,309	17,192	11,036	18,402
Livestock	879	414	362	4,778	8,121
Total	**31,358**	**31,728**	**52,604**	**35,562**	**59,675**
Number of farms	16	22	21	21	22

farms visited in 1954, or 73 per cent lower than the long-time average for the 1918-1959 period. In 1959, wheat averaged 15.0 bushels or 24 per cent higher than the long-time average. The common grades of wheat were mostly feed grades in 1954, and No. 3 and No. 4 Northern in 1959. The low yields and grades of grains produced in 1954 were caused by the servere rust infestation which prevailed throughout the survey area.

Farm Receipts.—The receipts from crop sales were higher on grain farms than on grain-cattle farms of the same size (Table 5). The receipts from crop sales averaged $9.47 per acre of cropland on medium grain farms, and $7.60 on medium grain-cattle farms, $9.29 on large grain farms, and $8.73 on large grain-cattle farms. The lower crop sales on grain-cattle farms were due, in part, to the higher feed requirements and also to differences in yields per acre.

Receipts from livestock averaged $0.62 per acre of cropland on medium grain farms, and $4.04 on medium grain-cattle farms, $0.22 on large grain farms, and $3.49 on large grain-cattle farms. The major portion of the receipts from livestock was from cattle. In 1954, the receipts from crop sales averaged only $2.13 per cropland acre.

Table 5.—Farm Receipts According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
		—average dollars per farm—			
Crop sales	1,276	5,851	10,921	4,430	8,612
Livestock sales	204	232	162	2,170	2,986
Livestock inventory change	....	43	102	43	357
Livestock products	70	110	....	142	97
Custom work	....	21	100	19	82
Miscellaneous farm	....	626	467	478	497
Total receipts	**1,550**	**6,883**	**11,752**	**7,282**	**12,631**
Number of farms	16	22	21	21	22

Miscellaneous farm income included such items as P.F.A.A. payments,[1] acreage payments and claims for hail damages. In 1959, the miscellaneous farm receipts in the four groups of farms ranged from four to nine per cent of the total receipts. In 1954, the farmers had no income from these sources.

Farm Expenses.—The total of cash expenses and depreciation for buildings and machinery was higher on grain-cattle farms than on grain farms (Table 6). Total expenses averaged $6.49 per cropland acre on medium grain farms in 1959, $7.23 on medium grain-cattle farms, $5.26 on large grain farms, and $6.70 on large grain-cattle farms. The higher total expenses on grain-cattle than on grain farms were due mainly to livestock expenses for such items as livestock purchases, feed purchases, hay and pasture leases, veterinary, medicine and breeding fees. There was no consistent pattern for some of the items of cash expense and depreciation to be higher or lower on one type than another in the same size group.

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[1] P.F.A.A. payments for 1954 crop year were paid "after harvest" and thus not included in the 1953-54 study year.

Table 6.—Farm Expenses According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
	—average dollars per farm—				
Cash expenses					
Real estate	294	521	974	529	921
Crop	764	231	403	152	354
Livestock	20	116	39	364	699
Livestock and machinery	729	1,051	1,811	1,119	1,587
Custom work	....	90	29	83	71
Labor	89	96	241	19	303
Miscellaneous	86	131	149	191	213
Total cash	**1,982**	**2,236**	**3,646**	**2,457**	**4,148**
Depreciation					
Buildings	170	269	380	267	363
Machinery	1,380	1,507	2,152	1,491	2,075
Total depreciation	**1,550**	**1,776**	**2,532**	**1,758**	**2,438**
All expenses	3,532	4,012	6,178	4,215	6,586
Number of farms	16	22	21	21	22

Total expenses per acre of cropland were $0.58 lower at $5.91 for medium grain farms in 1954. The higher total expenses on grain farms in 1959 than in 1954 were partly due to increases in the cost of items of expense, because of changing price levels.

Financial Summary.—The measure of net returns shown in the financial summary in Table 7, is the "Return to operator and family for labor, management and capital." The returns per acre of cropland averaged $5.46 on medium grain farms, $6.50 on medium grain-cattle farms, $5.28 on large grain farms, and $6.93 on large grain-cattle farms. The real estate value, machinery investment and productive capacity of the cropland on grain and on grain-cattle farms, of the same size group, were about the same. The main difference between the two types of farms was in the value of livestock and more specifically in the value of the cattle enterprise. The returns on all grain-cattle farms averaged $596 higher than on the grain farms or about $100 higher per $1,000 difference in livestock inventory values. This amount of additional returns seems to be fairly small, considering the amount of labor and capital involved in operating a cattle enterprise. However, there is the added advantage of facilitating disposal of surplus stocks of grains as feed grain and thus reducing storage costs. The receipts on farms in the 1954 study did not cover all the expenses incurred during the record year with the result that returns were negative, −$2.67 per cropland acre.

Farm Practice

Crop Production Practices.—Farm practices related to grain production varied between fields on the sample farms, between farms of the same size and type, and between farms of different sizes and types. In this discussion the variability or lack of variability in farm practices between farms of different sizes and types were emphasized. The following are the cultural practices and crop services studied:

Table 7.—Financial Summary, According to Size and Type of Farm, Medium Textured Soils, Dark Brown Soil Zone, Saskatchewan, 1954 and 1959

	1954	1959			
	Grain	Grain		Grain-cattle	
	Medium	Medium	Large	Medium	Large
	— average dollars per farm —				
Receipts					
Cash receipts	1,150	6,883	11,752	7,282	12,631
Farm products used in home and house rent	387	504	631	720	787
Total receipts	**1,937**	**7,387**	**12,383**	**8,002**	**13,418**
Expenses					
Cash expenses	1,982	2,263	3,646	2,457	4,148
Depreciation costs	1,550	1,776	2,532	1,758	2,438
Total expenses	**3,532**	**4,012**	**6,178**	**4,215**	**6,586**
Return to operator and family for labor and capital	−1,595	3,375	6,205	3,787	6,832
Number of farms	16	22	21	21	22

(1) **Pre-seeding**—Most farmers worked the land before seeding. Ninety-five per cent of the medium grain farmers, 90 per cent of the medium grain-cattle farmers, 95 per cent of the large grain farms and 77 per cent of the large grain-cattle farms performed at least one pre-seeding operation. Thirty-two to 43 per cent of the farms in the four groups had two operations and five to nine per cent had three pre-seeding operations. The blade type of implement (cultivator and noble blade) was the most common type of implement used for this purpose, especially on medium grain-cattle farms. The disc type of implement (discer and oneway) was a close second choice for the other three size and type groups of farms. Other implements used to a smaller degree for the first pre-seeding operations were rodweeders, spring tooth harrows, drag harrows and packers. The common implement used in the second pre-seeding operation was the drag harrow, particularly on fields that were cultivated on the first pre-seeding operation.

(2) **Seeding**—The oneway and the discer were used more extensively for seeding than the drill. Eighty-six per cent of the medium grain farms, 81 per cent of the medium grain-cattle farms, 76 per cent of the large grain farms, and 91 per cent of the large grain-cattle farms used either the discer or the oneway for seeding. Of the two (discer and oneway) the discer was by far the most popular.

(3) **Post-seeding**—This operation consisted of either pulling the packer behind the seeding implement or harrowing as a separate operation after seeding. About 50 to 75 per cent of the farms used the packer in conjunction with the seeding operation. Forty-eight to 60 per cent harrowed after seeding and about five per cent harrowed twice.

(4) **Summerfallowing**—Grain farms had more summerfallow operations than grain-cattle farms. All farms in each of the four size-type groups of farms had at least three operations. The proportion of farms with at least four summerfallow operations was 82 per cent of the medium grain farms, 81 per cent of the medium grain-cattle farms, 95 per cent of the large grain farms and 50 per cent of the large grain-cattle farms. The percentages of farms with at least five summerfallow operations were 41, 9, 71, and 23, respectively. There

were seven farms, of a total of 86 farms, that performed six operations and four of these farms were in the large grain-cattle group. Only one farm had seven summerfallow operations.

The blade type of implement was used more often than the disc type on all summerfallow operations and on all sizes and types of farms. The only notable exception was on the first summerfallow operation on the medium and large grain farms where the preference was for the disc type of implement. The over-all picture of extent of use of the various types of implement on all operations was about two-thirds blade type and about one-third disc type and others. Other implements used in summerfallowing were rodweeder and harrow.

(5) **Harvesting**—The common harvesting practice on all farms was swathing and combining. Some farmers straight-combined part of the crop but the acreage involved was small compared to acreage that was swathed and combined.

(6) **Rate of seeding**—The most common rate of seeding was 1.5 bushels per acre for wheat, two bushels per acre for oats, 1.5 bushels per acre for barley and 0.5 bushel per acre for flax. The rate of seeding of hard wheat was lower than for durum. The second choice in the rate of seeding hard wheat was 1.2 bushels per acre and two bushels per acre of durum. There was some variability in rates of seeding, especially hard wheat and barley between grain farms and grain-cattle farms. The grain farms favored the higher rates of seeding. There was no significant difference in the rates of seeding between medium and large farms of the same type.

(7) **Varieties of grains**—The varieties of hard wheat in descending order of preference were Thatcher, Selkirk, Lake, Chinook and Rescue. About two-thirds of the farms sowed Thatcher and one-third Selkirk.

The Varieties of durum wheat were Ramsay, Stewart and Golden Ball. Fifty-eight per cent of the farms with durum in the four groups of farms had Ramsay, 39 per cent Stewart and three per cent Golden Ball.

Rodney oats was the most common variety of oats. The preference for Rodney oats ranged from a low of 50 per cent on large grain farms to a high of 85 per cent on large grain-cattle farms, or an average of 69 per cent for the four groups of farms. Other varieties of oats in a descending order of preference were Garry, Victory, Ajax, Fortune and Exeter.

Of the three classes of barley (feed, malting and pearling), the farmers on all sizes and types of farms preferred the malting varieties. The varieties of barley were 45 per cent Montcalm (malting), 25 per cent Hannchen (malting), 15 per cent Parkland (malting) and 15 per cent Husky (feed).

The number of farmers seeding Redwood flax ranged from 38 to 83 per cent in the four groups of farms, or an average of 67 per cent for all farms in the four groups. Other varieties of flax seeded were Marine, Norland, Raja, and Rocket.

Only two farmers sowed rye and the variety was Antelope.

(8) **Fertilizer**—Only one farm of the 86 farms in the sample applied commercial fertilizer.

(9) **Wheed spray**—More grain than grain-cattle farms used weed spray. It was used on all or part of the cropland on 96 per cent of the medium grain farms, 57 per cent of the medium grain-cattle farms, 81 per cent of the large grain farms, and 68 per cent of the large grain-cattle farms. A larger per cent of wheat, barley and flax acreage was covered than of oats.

(10) **Grasshopper spray**—On most farms the grasshopper infestation was too light to require control measures. Eight of the 86 farms in the sample used grasshopper spray on fields that were infested. Usually weed spraying and grasshopper spraying were done in one operation on fields infested with both weeds and grasshoppers.

(11) **Seed purchases**—The proportion of farms in each of the four size-type groups of farms that purchased some grain ranged from one-third to two-thirds of the farms. Barley and flax were the most common grains purchased. The malting and pearling varieties weer replacing the feed barley varieties. With flax, the farmers were either starting into production or changing the variety of flax. The seed used in the production of wheat and oats was almost entirely home-grown.

(12) **Seed treatment**—At least some seed was treated for seed-borne diseases or wireworm control on 68 per cent of the medium grain farms, 86 per cent of the medium grain-cattle farms, 95 per cent of the large grain farms and 73 per cent of large grain-cattle farms.

(13) **Custom seed cleaning**—Most of the farmers (86 to 100 per cent) cleaned all or part of the seed grain at the local elevator. The other farmers cleaned all the seed grain that required cleaning with their own seed cleaning facilities.

(14) **Hail insurance**—Just over two-thirds of the farmers had all or part of the crop insured.

Cattle production practices.—The study of farm practices involved in livestock production was confined to the study of cattle only. Hogs, sheep and poultry were excluded because, first, these animals were of minor importance on most of the sample farms, and second, by many of the data relevant to the study of farm practices were not enumerated. Information on some of the cattle production practices was also lacking. Such items as breeds of cattle, winter shelter by class of animal, and market facilities were not enumerated. The pasture and feed practices of cattle on the 1959 sample farms were:

(1) **Pasture**—The sources of pasture were private and public (P.F.R.A. community pastures and co-operative pastures). Only one farm in each of the medium grain and large grain groups of farms used the public pasture facilities. Thirty-eight per cent of the medium grain-cattle farms and 45 per cent of the large grain-cattle farms had cattle on public pastures. The proportion of cattle in public pastures of total cattle numbers was negligible on medium and large grain farms, 37 per cent on medium grain-cattle farms and 39 per cent on large grain-cattle farms. The balance of the cattle in each of the four size-type groups of farms was grazed on privately owned and leased pastures.

(2) **Feed**—The main kinds of roughage fed to cattle were tame hay, grain forage and wild hay. Grain forage included all grain crops cut for feed in the form of sheaves, bales, or loose forage. The average amount of roughage per farm, fed to cattle, was 3.9 tons on medium grain farms, 37.1 tons on medium grain-cattle farms, 1.5 tons on large grain farms, and 56.1 tons on large grain-cattle farms. The average consumption of roughage was 2.6 tons per animal on medium grain farms and 1.2 tons per animal in each of the remaining three groups of farms. The kind of roughage fed varied only slightly between groups of farms. In the four groups of farms, the proportion of wild hay of all roughage ranged from 56 to 64 per cent, grain forage ranged from 28 to 39 per cent and tame hay ranged from four to eight per cent. Straw was used both as a residual feed and for bedding. The number of farms feeding straw and amounts fed were not enumerated.

Most of the farmers fed some grain to cattle and oats was the main grain fed. Eighty-four per cent of the grain fed on medium grain farms was oats, 62 per cent on medium grain-cattle farms, 94 per cent on large grain farms, and 84 per cent on large grain-cattle farms. Varying quantities of barley or wheat were often mixed with oats and fed as whole or crushed grain. The amount of grain fed on each of the four groups of farms varied extensively. The amount of grain fed to all cattle on medium grain farms with cattle averaged 97 bushels per farm, or 65 bushels per animal, medium grain-cattle farms 697 bushels, or 23 bushels per animal, large grain farms 175 bushels per farm, or 146 bushels per animal and large grain-cattle farms 725 bushels per farm, or 15 bushels per animal.

The use of supplements in the feeding ration was not a common practice. However, more grain-cattle farms (22 per cent) than grain farms used supplements. The large grain farms did not use supplements of any kind. In the other three groups of farms, the proportion of farms that added supplements to cattle feed was 10 per cent of the medium grain farms, 17 per cent of the medium grain-cattle farms, and 27 per cent of the large grain-cattle farms.

PROCESSING PEAS IN THE MARITIME PROVINCES

G. C. Retson and A. M. Boswell

Peas are one of the main vegetable crops processed in the Maritime provinces. Output has increased considerably in recent years and the acreage in processing peas since 1950 has about doubled to 3,890 acres in 1960. Many growers have had little experience with the crop but they, and others, show a great interest in the wide variations in yields and profitability and their relationship to cultural practices, and to many other aspects of the enterprise.

At the close of the 1959 season a small sample of pea enterprise records were secured in the main producing areas in Kings and Pictou counties in Nova Scotia, Carleton county in New Brunswick and Queens county in Prince Edward Island. In Kings and Pictou peas were grown for canning, whereas in Carleton and Queens they were processed in frozen form. It was initially planned to secure data for a second year before completing a report. As this was not possible the data presented below cover one year's operation only.

Costs.—Production costs varied from farm to farm and between areas, reflecting differences in soil and climate and in cultural and management practices. Data on total costs are generally comparable but data for individual cost items are not fully so because of variations in the amounts of labor and equipment provided by farmers or on a custom basis. A description of the major cost items and an explanation of variations in costs are given below.

Seed.—Seed was by far the major expense item and accounted for over one-third of the cost of producing the pea crop. Differences in prices paid for seed and rates of seeding resulted in considerable area variation in seed costs. Rates of seeding ranged from as low as 201 pounds an acre on a farm in Queens county to as high as 286 pounds an acre on a farm in Pictou county. Seed prices in Queens county were from three to five cents a pound below those in other areas.

Pride was the chief variety of seed grown in the canning areas of Kings and Pictou counties. In Carleton and Queens counties a large number of varieties were grown, the most frequently listed being *Perfection, Pluperfect* and *Freezer* 37.

Fertilizer.—In Kings, Queens and Pictou counties mixed fertilizer (usually 6-12-12) was applied at rates of 1,090, 618 and 535 pounds an acre respectively. In Carleton county peas followed potatoes in the rotation and growers depended largely on the residue from heavy applications of fertilizer on potatoes the previous year. Current applications of fertilizer, much lower than in other areas, were mainly in the form of nitrogen. Because of difficulties in determining residual values and farmers' objections to their inclusion in cost, no charge was made for the carry-over of fertility from applications of fertilizer on previous crops.

Manure.—Eleven of the 20 farmers in Kings county applied manure on peas at an average rate of 11 tons an acre. Except for one farm in Carleton manure was not applied on the pea crop. No charge was made for manure other than for the labor and equipment used in hauling and applying it. As manure has a relatively high residual value these charges were prorated on the basis of half the labor and equipment cost for manure applied in the current year, one-third of the cost of that applied the previous year and one-sixth of the labor and equipment cost for manure applied to peas two years before. Residual applications of manure (Table 2) were also calculated on this basis.

Labor and Equipment.—Labor used for the pea enterprise was charged at a rate of 75 cents an hour. The charge for use of power and other equipment included overhead as well as operating costs. In Carleton county growers harvested the pea crop chiefly with their own equipment. In other areas harvesting, and in some cases spraying, was done by the processor on a custom basis. This accounts for the higher charge for labor and use of equipment in Carleton county and the correspondingly higher charges for custom work in other areas.

Other Costs.—In Kings county, where land values were the highest and farming somewhat more specialized, the pea enterprise was conducted on a more intensive basis with costs generally higher than in other areas. The relatively low charge for use of land in Queens county is attributable to slightly lower land values and to the lower level of farm taxes in Prince Edward Island. The share of farm taxes chargeable to the pea enterprise was higher in Carleton than in other areas. In Kings county all growers applied both herbicide and insecticide sprays whereas in Carleton and Queens most farmers applied a herbicide spray only. Only one of the Pictou growers sprayed his peas.

Yields.—Peas prefer a comparatively moist climate and are very sensitive to extreme changes in weather during the harvesting period. The 1959 season was moderately favorable although heavy rainfall hampered harvesting operations in Queens county and even more so in Pictou where quality and returns were adversely affected. Yields of peas on the 53 farms averaged 3,277 pounds an acre. Average yields of 4,028 pounds an acre were secured by Kings county growers, followed by Carleton growers with 2,904 pounds, Pictou growers with 2,814 and Queens growers with 2,639 pounds. Apart from the influence of cultural and management practices, area variations in yield were probably of minor significance, and one point which should be noted in connection with the lower yields in Queens county was the fact that growers there had relatively little experience with the crop. Eight of the 12 growers in Queens county were growing processing peas for the first time and their group average of 1.3 years of experience with the crop compared with an average of 2.8 years in Carleton, 6.3 years in Kings and 13.9 years in Pictou.

Returns.—The 53 growers included in the study secured average receipts of $77.08 a ton from the sale of peas. In some cases, where there was an established market for pea vines, growers had the option of hauling home their vines or selling them at the plant. This additional sale or credit was included in receipts. Total receipts from peas averaged $1,591.79 per farm or $127.44 an acre. After deducting production costs, as computed in Table 1, the average grower had a net return of $30.79 an acre from the pea enterprise.

Table 1.—Costs of Producing Processing Peas in Four Areas of the Maritime Provinces, 1959

Item	Carleton county N.B.	Kings county N.S.	Pictou county N.S.	Queens county P.E.I.	All farms
Number of farms	12	20	9	12	53
Acres in peas per farm	22.4	12.2	8.9	6.0	11.2
			— cost per acre —		
			— dollars —		
Seed	32.59	38.90	39.55	22.07	34.65
Fertilizer	4.38	30.56	13.37	15.94	16.33
Lime	2.08	1.74	—	—	1.48
Spray material	1.63	7.00	.10	3.42	3.64
Use of land	2.91	2.30	2.06	1.31	2.41
Tractor	13.36	10.54	7.64	6.32	10.89
Truck	1.82	.07	.04	.13	.78
Use of other equipment	6.88	4.16	3.92	3.74	5.18
Custom work	.22	23.33	17.19	16.04	12.46
Labor	11.93	6.57	5.72	7.56	8.75
Other	.02	.05	.29	.23	.08
Total	**77.82**	**125.22**	**89.88**	**76.76**	**96.65**

Variations in Returns.—To analyse the influence of factors affecting returns the 53 farms were sorted on the basis of enterprise returns per acre. The association of low medium and high returns with various aspects of organization and management is described in Table 2.

Table 2.—Variations in Returns from Processing Peas, and Associated Factors, 53 Farms, Maritime Provinces, 1959

	Low return farms	Medium return farms	High return farms	All farms
Number of farms	18	17	18	53
Acres in peas	9.6	11.6	16.2	12.5
Yield per acre (pounds)	2,495	3,012	3,917	3,277
Pre-harvest labor (hours)	6.7	6.6	6.5	6.6
Growers with less than three years of experience (per cent)	56	41	33	43
Application or cost per acre:				
Fertilizer (pounds)	339	554	718	571
Fertilizer (dollars)	9.24	15.02	21.39	16.33
Manure residual (tons)	0.5	2.0	2.3	1.8
Spray material (dollars)	1.76	2.94	5.21	3.64
Use of land (dollars)	2.33	2.37	2.49	2.41
Seed (dollars)	34.35	33.05	35.91	34.65
Labor and equipment (dollars)	39.43	39.55	36.17	38.06
Pea receipts per ton (dollars)	62.04	78.44	83.30	77.77
Pea receipts per acre (dollars)	77.38	118.15	163.14	127.44
Pea cost per ton (dollars)	70.98	63.02	52.38	58.98
Pea cost per acre (dollars)	88.55	94.93	102.59	96.65
Pea enterprise returns per acre (dollars)	11.17	23.22	60.55	30.79

High returns from peas were associated with above-average acreage and yield per acre. Higher yields were in turn associated with heavier applications of fertilizer, manure and spray material. The fact that these additional operations were conducted with fewer hours of pre-harvest labor and at a lower total labor and equipment cost is an indication of the more efficient use of labor and equipment on the high-return farms.

Increased inputs of fertilizer, etc. resulted in higher costs per acre but lower costs per ton of peas marketed. The quality of peas marketed by the high-return farms also included a higher percentage of the top grades, as indicated by the higher price they received for their product.

Relation to Other Enterprises.—Farmers operated an average of 214 acres of which 12.5 acres were in peas, 10.0 in potatoes, 23.1 in grain, 41.5 in hay and 5.7 acres in other crops. Livestock numbers varied considerably between areas and averaged about 28 cattle, 12 to 13 hogs, 3 sheep and 342 hens and chickens.

Farmers' reasons for growing peas and their comments on the relationship of the crop to other farm enterprises varied by area and type of farm. In Carleton county, where potatoes averaged 37 acres per farm, considerable emphasis was placed on the economies in fertilizer and labor and equipment when peas followed potatoes in the rotation. With the soil well worked up following potatoes, time spent on plowing and harrowing pea land in Carleton county averaged only 1.4 hours an acre compared with an average of 2.8 hours an acre for all farms in the study. The preference for peas over grain, particularly on farms emphasizing cash crop production, is probably an important factor in the decline of the grain acreage in the county in recent years.

In Kings county crop programs were more varied than in other areas and two and sometime three crops of peas were grown in succession. Hours of pre-harvest labor were higher than in other areas, reflecting heavier applications of fertilizer and manure and considerable emphasis on weed control. Since the processor did the spraying and harvesting, however, total labor and equipment requirements for the crop were relatively low. Growers noted that the crop fitted in well with other farm enterprises which included fairly large numbers of livestock. Farms were located closer to processing plants than in other areas and much more emphasis was placed on the value of pea vines as a cheap source of livestock feed.

Queens county growers noted that peas went well with their mixed type of farming which included an average of seven acres of potatoes. Because of its low requirements for labor, equipment and storage the crop offered special advantages for the small mixed farm.

In Pictou county peas generally followed pasture and time spent on plowing and harrowing operations was much greater than in other areas. Farmers in Pictou and Queens counties, however, had little problems with rock picking which in Carleton and Kings counties averaged 1.0 and 1.7 hours an acre respectively. Pictou growers noted the need for additional cash crops in their county and the fact that peas were particularly well adapted to the area. Although returns from the 1959 crop were not too satisfactory they noted that over the years peas had been a valuable cash crop in the county.

PUBLICATION OF THE ECONOMICS DIVISION

An Inquiry into the Relationships between Changes in Over-all Productivity and Real Net Return per Farm, and between Changes in Total Output and Real Gross Return, Canadian Agriculture, 1926-27. Lok, Siepko H., Ottawa. October 1961. pp. x + 175.

The writer tests the following two hypotheses:

1. The relationship between annual percentage changes in over-all productivity and real net return per farm is negative or zero for Canadian agriculture.

2. The relationsip between annual percentage changes in aggregate output and real gross return is negative or zero for Canadian agriculture.

Using simple linear regression equations of annual percentage changes in real net return per farm and over-all productivity, he finds a positive relationship between the two variables. Moreover, the coefficients of correlation are well above the value required to be significantly different from zero at the one per cent level. He also finds that the regression and correlation analyses for the averages of annual percentage changes in output and real total gross return give positive regression coefficients and correlation coefficients significantly different from zero at the one per cent level.

His dissertation centers around the following topics: over-all productivity; weight period problem; procedure for estimating aggregate indexes of total output for Canadian agriculture, 1926-1957; indexes of over-all productivity; real net return per farm, and estimates of real realized and total gross returns. It ends with the testing of hypotheses and a summarization of propositions.

The dissertation itself is followed by a copious bibliography and three appendixes. In Appendix I the reader is reminded that L. von Bortkiervicz has demonstrated that "the Laspeyres index number will be higher than the Paasche index number if the weighted coefficient of correlation between the price and quantity relatives is negative", and vice versa. Lok uses two "illustrations" to show that this conclusion can also be reached diagrammatically. Appendix II deals with the computer programs and Appendix III supplies tables on the computation of total input and total output indexes for Canadian agriculture.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Fertilizers, An Annual Review of World Production, Consumption and Trade, 1960. Statistics Division, FAO. 1961. pp. viii + 115.

The Review covers the 1954-55 to 1959-60 period, in which figures for 1959-60 are only preliminary.

Consideration is first given to changes in the total production of commercial fertilizers and then to changes in the production of nitrogen, phosphate, and potash fertilizers, and finally to the consumption and trade of each type of fertilizer. The Appendix includes statistical tables that supply detailed data on production, consumption and trade of fertilizers in different countries.

Economic Bulletin for Europe. Prepared by the Secretariat of the Economic Commission for Europe. Vol. 13, No. 1. Geneva. August 1961. pp. 55.

This issue of the Bulletin contains a 49-page article on "Recent Changes in Europe's Trade" and a "Note on a method of calculating changes in concentrations of intra-western-European trade in the fifties".

Monthly Bulletin of Agricultural Economics and Statistics. Vol. 10, No. 11, November 1961. FAO, Rome, Italy.

The special feature of this issue is a nine-page article titled "An FAO Index of Export Prices of Rice". Commodity Notes deal with sugar and coffee in the European Economic Community and with markets and prices for hard fibres.

Economic Bulletin for Europe. Vol. 13, No. 2. Secretariat of the Economic Commission for Europe. Geneva, November 1961.

The first part of the bulletin deals with recent economic developments in Europe and brings the Soviet Union into the picture for such matters as industrial production and employment, investment outlays and construction, agricultural output and consumers' incomes and supplies but not for the review and discussion of expanding demand in western Europe, production, employment, productivity, prices, costs, agriculture, trade and payments, and policies and prospects. The second part is concerned with economic development in Rumania.

Methods of Estimating Total Population for Current Dates. Manual I. Population Studies, No. 10, Department of Social Affairs, Population Division, New York. 1962. pp. vi + 45 (Available from the Sales Section, Office of the Conference Services, U.N., New York as well as from the Queen's Printer, Ottawa).

The first of a series of manuals on methods of estimating population prepared by the Population Division. It deals with "methods of estimating the total population of a country or territory for current dates".

OTHER PUBLICATIONS

Working and Living Conditions in Canada. Economics and Research Branch, Department of Labour in consultation with the Department of Citizenship and Immigration. April 1961. pp. vi+76. Available from the Queen's Printer, Ottawa. Price: 25 cents.

The tenth edition of a booklet that supplies current information on working and living conditions in Canada. Profusely illustrated, with photos and statistical charts, it contains a wealth of information on population and employment, how to find a job, wages, salaries and earnings, working conditions, education and training, living standards, and social welfare services in Canada.

Nova Scotia Farm Management Reference Manual and Farm Planning Guide. Grant, Walter V. Farm Management Division, Extension Service Branch, N.S. Department of Agriculture and Marketing. Revised, September 1961. pp. 121.

A reference manual designed "to assist Nova Scotia farm families plan their farm business units".

The introductory section defines farm business management and stresses its decision-making aspects. The next two sections show how to handle forms used in farm business analysis and in farm planning. They are followed by five sections which supply data on crop, livestock and poultry production as well as on buildings and equipment and on farm credit, prices and insurance; these data will supplement the information which the farm operator may already have from his own farm records.

Economic Growth. Forsey, Eugene, Director of Research, Canadian Labour Congress. Sixth JJ. Morrison Memorial Lecture, Ontario Agricultural College, Guelph. October 31, 1961. pp. 9.

In this lecture Dr. Forsey asserts that "economic growth is . . . our biggest single economic problem, and until we solve it our bravest attempts to solve the others may well turn out to be largely exercises in futility". He reviews developments in productivity, employment and trade in recent years, discusses the comparative advantages of developments in the private and in the public sector of our economy as well as the effects of fiscal and monetary policies on employment and economic growth.

Some Economic Aspects of Supply Control in the Flue-cured Tobacco Industry in Ontario. Department of Agricultural Economics, Ontario Agricultural College. Guelph. October 1961. pp. 32.

As noted in the preface, "The flue-cured tobacco growing industry in Ontario is characterized by two distinct features. One is the fact that, in terms of farm value of production, flue-cured tobacco is the most important cash crop; the other is the supply control program by which tobacco growers try to adjust the supply of flue-cured tobacco to the demand for it through rigorous acreage allotments."

The report is organized into five chapters. Chapter I review the chief aspects of the flue-cured tobacco industry in Ontario and Chapter II is concerned with the characteristics of production and its cost and income structure. Chapter III presents a chronological and analytical review of the marketing of flue-cured tobacco since 1920, giving special attention to "organized activity on the part of growers to improve their bargaining power and obtain a stronger influence over the marketing of their product." Chapter IV discusses some of the effects of supply control.

Farm Management Data from Illustration Station Farms, 1953-1958. Publication 1,137, Experimental Farms Service, Canada Department of Agriculture, Ottawa. November 1961. pp. 10.

A reprint of the Farm Management Studies section in the Progress Report of the Illustration Stations Division of the Experimental Farms Service, for 1954 to 1958.

This brief report presents an analysis, on a regional and on a type-of-farming basis, of the data obtained from a "general farm business study of . . . . illustration stations", for the four-year period 1953-56. It also presents some of the results of single enterprise studies and of studies of the costs of operating farm machinery.

Crop Insurance. Canada Department of Agriculture. Ottawa. February 1962. pp. 8.

This folding pamphlet tells the reader that "The Federal Crop Insurance Act provides an opportunity for a provincial government to draw up a program of crop insurance suited to the particular needs of that province, and permits Canada to make a reasonable contribution to the development of that program". It describes what the Act offers to farmers, reviews the advantages of crop insurance, comments on the insurance schemes of the Manitoba Crop Insurance Corporation and of the Saskatchewan Crop Insurance Board, and gives data on typical crop insurance coverage and premium rates for wheat in representative areas of Manitoba and Saskatchewan, the only two provinces with crop insurance schemes. Prince Edward Island is expected to complete a crop insurance agreement covering potatoes, early in 1962.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
	1935-39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	222.5	180.9	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	219.6	169.1	270.0	253.2	281.0	226.7	129.2	124.0	172.5
1961										
Jan.	231.7	223.3	169.6	277.1	261.3	273.0	223.5	129.2	124.4	165.8
Feb.	232.1	222.8	169.2	276.3	262.1	....	....	128.9	124.0	166.3
Mar.	231.3	218.5	168.4	268.6	259.8	....	....	129.1	124.0	165.5
April	230.9	215.2	168.7	261.7	255.6	284.7	226.6	129.1	123.9	168.5
May	231.2	216.0	167.6	264.4	254.5	....	....	129.0	123.2	169.1
June	231.4	218.7	172.8	264.7	257.1	....	....	129.0	123.5	172.7
July	234.5	218.4	172.5	265.3	257.4	....	....	129.0	124.9	172.5
Aug.	234.5	214.0	162.6	265.4	244.7	289.0	230.0	129.1	125.3	175.4
Sept.	235.3	216.0	159.8	272.3	247.1	....	....	129.1	123.2	177.4
Oct.	235.3	217.3	159.3	275.3	245.7	....	....	129.2	123.3	177.2
Nov.	235.3	216.6	158.2	275.0	245.9	....	....	129.7	123.6	179.2
Dec.	236.5	217.0	159.8	274.2	247.0	....	....	129.8	124.5	180.7
1962										
Jan.	237.0	218.9	166.7	271.0	247.4	281.8	233.6	129.7	124.8	178.6
Feb.	237.2	219.2	167.5	270.8	246.4	....	....	129.8	125.0	180.5
Mar.	237.1	217.3	167.1	267.5	246.6	....	....	129.7	124.4	....
April	237.4	219.2	166.4	272.0	247.4	....	....	130.3	125.8	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Gross National Product.—Canada's gross national product rose to $36.8 billion in 1961 from $35.9 billion in 1960. Following a weak first quarter, the level of activity followed a rising trend for the remainder of 1961. By the final quarter of the year, the G.N.P. was running at a seasonally adjusted annual rate about three per cent above the 1961 annual average, in terms of current dollars, and almost three per cent higher in terms of physical volume of production. This rising trend was dampened by a poor grain crop in western Canada; this crop was estimated to have been lower in value than in 1960 by about $400 million, which represents a production loss of about one per cent on the G.N.P. base of $36.8 billion.

The year 1961 was marked by sharply rising exports to a) the United States, where a strong economic recovery was underway, and b) Communist China and Eastern Europe where large sales of wheat raised the levels of agricultural exports to new levels.

The decline in busines outlays for new plant and equipment in the last half of 1960 was reversed in 1961. Business inventories accumulated at a slight rate during most of 1961 and in the last quarter of the year the tempo quickened and added new strength to the expansion of total demand. Consumer expenditure declined slightly in the first quarter but advanced moderately afterward; outlays for consumer durable goods displayed a sharp recovery during the year. Government outlays for new goods and services continued to strengthen the rising level of total

Labor.—Average weekly wages in manufacturing rose from $75.46 in January to $75.97 in February 1962; average hourly earnings remained at $1.86 but the work week lengthened slightly from 40.6 to 40.7 hours. In February 1961 weekly wages averaged $73.40, hourly earnings $1.82 and the work week 40.4 hours.

Canada's paid workers received about $1,576 million in February 1962 in the form of salaries and wages and supplementary labor income, exceeding by 0.6 per cent the January 1962 total of $1,566 million and by 6.8 per cent the February 1961 total of $1,475 million. Labor income rose 6.8 per cent to $3,141 million in January-February 1962 from $2,941 million in the corresponding period of 1961.

Wholesale Trade.—Canada's wholesalers had sales estimated at $707.5 million in February 1962, which represents a 10.3 per cent increase from the $641.3 million recorded in February 1961. The January-February total rose 13.3 per cent to $1,404.2 million in 1962 from $1,239.6 million in 1961.

Sales were higher in February 1962 than in February 1961 for nine of the 18 trades for which separate information is available, lower in eight and unchanged in commercial, institutional and service equipment and supplies. Increases ranged from 1.2 per cent for newsprint, paper and paper products to 13.2 per cent for groceries and food specialties, and decreases ranged from 0.2 per cent for hardware and 20 per cent for farm machinery.

Consumer Prices.—Canada's consumer price index (1949=100) rose from 129.7 in March to 130.3 in April 1962. Increases occurred in the food, clothing, transportation, health and personal care, and tobacco and alcohol indexes. The housing index did not change and the recreation and reading index declined very little.

The food index rose from 124.4 to 125.8; seasonally higher prices were reported for most fruits and vegetables, particularly cabbage, lettuce, celery and apples. Higher prices were also reported for beef, some pork items, chicken and bread. Prices were lower for eggs, frozen orange juice, fresh tomatoes, chocolate bars, and fats (including butter).

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39=100) rose only from 246.4 in February to 246.6 in March 1962. The larger increases were recorded for poultry products and potatoes.

Wheat.—Supplies of wheat remaining on or about April 1 in the four major exporting countries for export and for carryover at the end of their respective crop years totaled 2,103.1 million bushels, a 15 per cent decline from the 2,482.3 million bushels available a year previously and the lowest supplies available at April 1 since 1958. April 1 supplies, in millions of bushels and with figures for 1961 in brackets, were as follows: United States, 1,529.9 (1,580.1); Canada, 394.6 (674.2); Argentina, 49.0 (40.4); and Australia, 129.6 (187.6).

During the August-March period of the current crop year total exports of wheat and of flour in terms of wheat from the four major exporting countries were at the very high level of 919.5 million bushels, compared with 817.6 million bushels exported during the corresponding months of 1960-61 and the 1950-51 - 1959-60 August-March average of 549.3 million.

Wheat and flour exports, including exports under government programs, from the U.S., Canada, and Australia were at much higher levels in August-March of the current crop year than in the corresponding months of the previous year; exports from Argentina were only slightly lower. Canadian wheat and flour exports during August 1961-March 1962, according to preliminary data, totaled 243.9 million bushels; this figure exceeds the total for the corresponding months of the previous crop year by 19 per cent and is the third largest total on record for the first eight months of the crop year. August-March shipments from the United States rose to 479.1 million bushels from 447.8 million, shipments from Australia to 141.9 million from 108.6 million; exports from Argentina declined to 54.6 million from 55.4 million bushels.

Farm Cash Income.—Canadian farmers received a record total (estimated) of $2,958.5 million from farming operations in 1961. This total exceeds by 3.5 per cent the previous record of $2,859.1 million achieved in 1952, and by 6.4 per cent the 1960 total of $2,781.5 million. These estimates include cash income from the sale of farm products, Canadian Wheat Board participation payments net cash advances on farm-stored grains, and deficiency payments under the farm prices support program.

The chief contributors to the 1961 increase were wheat, flaxseed, fruits and vegetables, tobacco, cattle, calves, dairy products, poultry products, and Canadian Wheat Board participation payments. These gains were slightly offset by greatly reduced returns from potato sales, a large net repayment of cash advances on farm-stored grains in western Canada, and lower income from oats and barley.

Supplementary payments to Western farmers totaled $35.8 million in 1961 and 77.2 million in 1960. The addition of these figures gives a total cash farm income of $2,994.3 million in 1961 and $2,856.7 million in 1960.

AGRICULTURE—IN THE REPORT OF THE ROYAL COMMISSION ON TRANSPORTATION

J. I. GUEST

In 1960, according to the *Waybill Analysis* of the Board of Transport Commissioners 45 per cent of the ton-miles of work done by the Canadian railways involved the movement of agricultural products or animals and animal products. Export grain formed an overwhelming proportion of the total movement. This factor undoubtedly influenced the Royal Commission on Transportation to conclude that as export grain becomes proportionately less important to the Canadian economy and as more grain is converted into meat, milk, poultry and eggs for domestic consumption, rail transportation "will become of lesser rather than greater importance in transporting the products of the agricultural industry" (Vol. II, p. 133-34)[1].

Does this mean that the recommendations of the Royal Commission on Transportation will have little influence on agriculture? In the most general terms any policies which will reduce the total transportation costs of the nation will benefit all industries. However, specific industries may be affected to a greater or lesser degree in the process of change which is taking place in the transportation industry—changes which the Report of the Royal Commission hopes to accelerate with a minimum of dislocation to firms, industries, localities and regions.

This review deals with those recommendations which may have a direct or indirect impact on the movement of agricultural commodities.

The Objective of the Report.—The central objective of the Royal Commission on Transportation was to reorient public policy in order "to create conditions which will permit each mode, and each firm within each mode, to obtain that share of the growing volume of the traffic which, on the basis of inherent competitive advantage, it is entitled to." To achieve these ends the Commission redefined National Transportation Policy. (Vol. II, p. 6). Rather than functioning as an instrument of National Policy as in the past, National Transportation Policy must have the objective of providing "efficiency and economy in the transportation system". "Efficiency and economy" in the eyes of the Commission are the handmaidens of competition; hence public policy must encourage competition in the transportation industries.

In short the Report of the Royal Commission demands that apart from minimum regulation of certain declining areas of monopoly Canada's transportation companies must be given the opportunity of operating as competitive business enterprises with profit maximization as the guiding consideration. Because competitive firms have a tendency to price their services in relation to their own or their competitors' costs, the Commission feels that the most efficient firms will survive market competition since, by definition, the most efficient firms are those with the lowest costs. Hence intra and intermodal competition will bring about the most efficient division of transportation services in Canada with the minimum misallocation of resources and the lowest total transportation bill to the nation.

General Conclusions.—To this end the Royal Commission advanced a "package policy" of recommendations based on the following general conclusions (Vol. I, p. 29):

1. Minimum of regulations for transportation in Canada to bear in a "reasonably equitable fashion on all carriers".
2. Public policy to actively encourage the rationalization of railway plant and operations. If, for national policy reasons, uneconomic rail

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[1] *Report of the Royal Commission on Transportation,* Volumes I and II, Queen's Printer, Ottawa, 1961.

operations must be maintained then the railways should be compensated from the public purse.

3. "No particular form of transport should be singled out as an instrument of national policy if any burden is involved in the performance of the function unless sufficient compensation is provided to that mode of transport to prevent distortions in the competitive transport market."
4. "Assistance to transportation which is designed to aid, on national policy grounds, particular shippers and particular regions should be recognized for what it is and not be disguised as a subsidy to the transportation industry. Moreover, whenever assistance of this kind is distributed through the transportation medium it should be available on a non-discriminatory basis to all carriers".

Recommendations

The Royal Commission groups its recommendations into two main categories—National Transportation Policy and National Policy and Transportation.

A. National Transportation Policy

The main recommendations deal with minimum and maximum rate control and the rationalization of rail plant.

Minimum Rate Control.—The Report recommends that the minimum rates for railways be enforced by the regulatory authority according to the principle that no traffic should be carried at less than the "direct out-of-pocket costs of movement in the very short run, or for a longer time span, at variable costs as defined for the period, or at long run marginal costs." (Vol. II, page 67). As a result of the studies conducted by the railways, for the Commission, on the cost of moving western grain to export positions it was ascertained that there was a short fall in variable cost on the total movement. Consistent with the principles of minimum rate control the Commission recommended that as the statutory and related grain rates were under the control of Parliament the short fall in variable costs, measured annually, should be made up by the National Treasury—in addition of course to a reasonable annual contribution to overhead costs estimated at $9 million to the C.P.R. and $7.3 million to the C.N.R.

As the railways pare off excess capacity and consolidate their operations—particularly in western Canada—the cost of moving export grain will undoubtedly decline and the rates may once more become compensatory.

Maximum Rate Control.—Maximum rate control is based on the principle that regulation is essential in areas of monopoly in transportation.

In the words of the Report the immediate problem "was to substitute a more realistic method of maximum rate control for the traditional class rate maximum, which will protect the captive shipper and not limit the operation of commercial principles in the growing competitive areas." (Vol. II, p. 110).

The Commission assumes that all current rail freight rates are just and reasonable. After the introduction of maximum rate control as recommended a rate may be tested only if increased by the railways. The formula suggested in the Report is the long-run variable cost of a given movement plus 150 per cent of such cost and based on a minimum net weight of 30,000 lbs.

To demonstrate the potential impact of the formula on one of the main agricultural freight movements—feed grain[1]—Table 1 has been organized from cost statistics prepared by the Interstate Commerce Commission's Bureau of

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[1] As the statutory and related grain rates are under the control of Parliament maximum and minimum rate control is irrelevant insofar as export grain is concerned.

Accounts. (The I.C.C. costs are long-run out-of-pocket costs based on territorial averages, for specific types of equipment; in this instance, of box cars in the Western District which includes all United States west of the Mississippi River including Northwestern Illinois and Wisconsin. These costs do not coincide with the long-run out-of-pocket costs of a specific movement. However, they are the only published costs available with the exception of the grain cost study submitted by the C.N.R. and the C.P.R. to the Royal Commission[1]. As the grain cost study determined the average cost of moving statutory and related grain to export position in western Canada there is a degree of comparability. Certainly the cost functions of weight and distance have similar characteristics.)

The movement in question involves domestic grain from Edmonton to Vancouver, a distance of 765 miles, and the I.C.C. costs reflect a distance of 750 miles. The table indicates the behavior of costs as the carload weights increase, in addition to the contributions to constant costs at the varying minimum weights. This example is chosen because the railways have a complete monopoly of the movement, owing to grain marketing regulations and the Feed Freight Assistance program.

Assuming that I.C.C. out-of-pocket costs are comparable to the long-run variable costs of the feed grain movement it can be seen from Table 1 that the current rate of 78 cents per 100 lbs. enables the railways to earn nearly 300 per cent of variable costs on the movement of an 110,000-lbs. car. The proposed maximum, however, would enable the railways to earn over 650 per cent of the variable cost of movement. On the basis of the proposed formula for maximum rate control the railways would be free to raise the rate on this particular movement of feed grain to 177½ cents per 100 lbs. if they considered that the attrition of traffic would be compensated for by the higher rate[2].

Table 1.—Cost and Rates for Domestic Grain (Feed), Edmonton to Vancouver (765 miles)

1. Net weight per carlot........lbs........	30,000	60,000	80,000	110,000	120,000
		(cents per 100 lbs.)			
2. I.C.C. out-of-pocket costs...............	71.0	40.4	32.8	26.6	25.2
3. 2½ × out-of-pocket costs.................	177.5[a]	101.0	82.0	66.5[b]	63.0
4. Commodity rate—"Roll-back level"....	72.0	72.0	72.0	72.0	72.0
5. Commodity rate—normal level.........	78.0	78.0	78.0	78.0	78.0
6. Class 30 rate—........................	129.0	129.0	129.0	129.0	129.0

[a] Proposed maximum rate based on 30,000 lbs. minimum.

[b] Maximum rate at the approximate average carlot weight of wheat, oats and barley moving within western Canada. The average weight of (of wheat, oats, barley moving within western Canada) according to the *Waybill Analysis, 1960* was 112,200 lbs. per car and moved an average distance of 840 miles.

Note:—The lowest minimum weight for bulk grain is 40,000 lbs. (class rate). Commodity rate minima range from 80,000 lbs. for oats to 115,000 lbs. for wheat depending on the size of the car.

While it must be admitted that this is an unusual case of rail monopoly it fits the conditions under which the *Report* suggests that maximum rate regulation is required to protect the captive shipper.

It must be pointed out at this juncture that the Commission recommends that transportation subsidies such as Feed Freight Assistance should be paid to truck movements. If this were the case, and provided that trucks be allowed

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[1] The Canadian Pacific Railway ascertained a very close relationship between the percent variability in their grain cost study and that of the I.C.C. cost finding procedure.

	C.P.R.	I.C.C.
Operating expenses, rent and taxes	77%	80%
Road property investment	40	50
Equipment investment	100	100

[2] The highest rate possible at this time is the class rate on grain of 129 cents per 100 lbs., Edmonton-Vancouver.

to make interprovincial deliveries of feed grains, it would be most unlikely that the railways could increase the feed grain rates from Edmonton to Vancouver. The proposed maximum rate formula implemented *by itself* would give no protection to the "captive" feed grain shippers in Vancouver. However, combined with the principle of impartial allocation of transport subsidies the objective of maximum rate control may be realized through competition.

As one surveys the list of agricultural commodities it is apparent that apart from grain and grain products, moving mainly within western Canada, maximum rate regulation will have little impact on remaining commodity movements because of pervasive truck competition.

Rationalization of Rail Plant.—Based on the principle that railways must be allowed to operate a commercial enterprise with the minimum of regulation the Report of the Royal Commission recommends (Vol. II, p. 124) that the management of both public and privately owned railways must be able "to initiate the removal of unprofitable segments of their business."

Specifically, the Commission felt that the railways could obtain major economies by divesting themselves of uneconomic branch lines, which are found chiefly in western Canada. To grasp the dimensions of the problem of excess capacity it can be seen from the Report (Vol. II, pp. 128-132) that in 1954, 16.39 per cent [1,800 miles] of the C.N.R.'s 11,225 miles in western Canada carried less than 1 per cent of the total traffic. Similarly, of the C.P.R.'s 10,625 miles in western Canada 18 per cent or 1,900 miles carried only 0.73 per cent of the total traffic of the region. Not all light density lines are uneconomic. The Canadian Pacific Railway pointed out to the Royal Commission (*Transcript,* Vol. 113, p. 18,762) that they had only 846 miles of branch line with less than 25,000 net ton-miles per mile of line on the entire system. R. A. Emerson, the C.P.R.'s First-Vice President, stated to the Commission that "it is my view that a branch line with less than 25,000 net ton-miles per mile of line would justify a detailed economic study unless there are clear overriding factors such as potential traffic" (*Transcript,* Vol. 109, p. 18,242)[1].

The Commission apparently felt that 25,000 net ton-miles per mile of track understated the break-even point of costs and revenues on a branch line because its recommendations are based on branch lines having annual traffic densities of 100,000 net ton-miles or less per mile of track of which both the C.P.R. and the C.N.R. each have about 4,300 miles (Vol. I, pp. 61-62).

The Commission recommends that uneconomic branch lines be abandoned over a 15-year period and further recommends that as many uneconomic branch lines must be continued for some years in the public interest, "to enable adjustments to be made both by investment in rail and in investment tied to rail" (Vol. I, p. 42), the railways should be reimbursed for any losses[2] incurred to the extent of $13 million a year, pro-rated on the basis of mileage filed with the Board of Transport Commissioners, on those lines to be abandoned.

The Report further recommends that no abandonments will be allowed by the Board without full public hearings. The criteria guiding the judgment of the Board of Transport Commissioners on abandonments should include "the condition of the lines, the effect on investment tied to rail, the alternative services available and such other matters as affect a reasonable and orderly transition to other transportation facilities . . ." Of particular importance to western agriculture is the effect on investment tied to rail.

Abandonment of Uneconomic Branch Lines and the Grain-Gathering System of Western Canada.—The proposals of the Royal Commission on branch line abandonments will, if carried out, reduce the total costs of rail transportation to the nation and add impetus to the consolidation of the grain-gathering system in western Canada with its consequent economies. However, the abandonment of uneconomic branch lines in western Canada will result in the relocation of grain elevators and the economic attrition of many rural communities. The small town in the prairie provinces has developed historically as a market community based on grain deliveries to railhead. Many small towns exist today only because of the country elevator system as much of the retail business has been consolidated in larger centers easily accessible by highway to the surrounding agricultural community.

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[1] *Transcript of evidence taken at Public Hearings of the Royal Commission on Transportation.*

[2] System net loss for which branch line is responsible.

The Report deals with the problem of the relocation of country elevators specifically but points out that "What is presented for one industry will be accepted for any that fitted the similar situation in Canada."

Studies done for the Commission indicate that major economies of scale would be achieved by a consolidation of the grain-gathering system (Vol. II, p. 153). For example,

"1. Maintenance per thousand bushels for elevators of a capacity of 75,000 bushels or over, is 68 per cent less than the cost of elevators of 40,000 bushels capacity.

2. Operating costs per thousand bushels of capacity are reduced by one-half in the larger elevators as compared with those under 40,000 bushels of capacity.

3. Replacement costs of larger capacity elevators are approximately 39 per cent less per thousand bushel capacity than for smaller elevator.

4. There is a reduction in administration costs not directly allowable to individual elevators."

The Report suggests, however, that despite the cost saving of consolidation consequent on abandonment, *"the loss of existing facilities plus the necessity of providing new ones may place an undue strain on the finances of many grain handling companies."*

Therefore, the Commission recommends that in line with already existing policies and programs of the Federal Government to use tax incentives to change patterns of investment, to assist specific industries, to stimulate industries in new areas or to encourage development of new products, assistance should be rendered to industries located on branch lines which are candidates for abandonment.

The Report suggests that an agency such as the *Board of Grain Commissioners* could administer a program of tax incentives to assist the relocation and encourage consolidation of country elevators from abandoned rail lines, (Vol. II, pp. 156-157).

Some Problems of Branch Line Abandonment.—The annual meeting of the Saskatchewan Wheat Pool held in Regina, November 1961, passed a comprehensive resolution on principles of branch line abandonment. Among the principles adopted the Pool stresses "the need to consider the question of line abandonment as a whole rather than to deal with individual application for abandonment" and "the need for co-ordination of the abandonment proposals of the two major railways to determine the overall effects before any individual abandonment applications are granted." (*Prairie farmers and the Future of the Railways,* Background paper 1962, Research Department, Saskatchewan Wheat Pool).

The position of the Canadian Pacific Railway is that each abandonment proposal should be considered on its own merits and that "Long range over-all planning is not appropriate in dealing with the question of excess branch line mileage but studies of individual cases must consider potential traffic and not be based solely on short term economies." (*Canadian Pacific Railway; Summation and Argument* p. 217).

The position of the Canadian National Railways seems to favor over-all planning as summed up by their Counsel "We are much more interested in approaching the problem in a realistic and rational fashion following discussions and consultations with all parties concerned." "In fact", the Counsel continued, "the evidence before you is to the effect that Canadian National's representatives are today (Feb. 6, 1961) proceeding with a general study in western Canada, in company with the Grain trade, the provinces and the municipalities to see what can be done to revise the rail pattern in this area". (*Argument of Counsel for Canadian National Railways,* p. 38).

The Royal Commission recommends that the disposition of uneconomic branch lines be the responsibility of the Board of Transport Commissioners, guided by the "public interest" as well as bookkeeping.

B. National Policy and Transportation

It is the opinion of the Commission "that national transportation policy has often been a great deal more preoccupied with the question of how effectively the transport system was functioning as an instrument to fulfil national policy objectives, than with the question of how well it was functioning as an economic enterprise". (Vol. II, p. 180).

While realizing that "as long as the transportation system is required to perform services which do not reflect commercial incentives, financial assistance from the government will be a necessary concomitant of national transportation policy." (Vol. II, p. 195), the Report recommends "that competitive advantages which accrue to one particular mode as a result of its historical involvement in broad national policy considerations must be eliminated, either by making available to all modes the advantages that hitherto have been reserved to the 'chosen instrument' or by finding non-transport means of achieving the same national policy objectives." (Vol. II, p. 200).

The Commission then goes on to analyse three programs through which, for national policy reasons, the Government of Canada has over the years assisted certain shippers by bearing a portion of their rail transport costs.

(a) The Maritime Freight Rates Act.
(b) The "Bridge Subsidy".
(c) The Feed Freight Assistance.

The common characteristic of the three plans is that the subsidy discriminates against certain transport media and thus causes a misallocation of resources. It is also clear that any change in the programs will have, to a greater or lesser degree, some impact on the movement of agricultural commodities or commodities used in agriculture.

Feed Freight Assistance.—In a special study published in Volume II the Royal Commission drew the following general conclusion in regard to feed freight assistance, (Vol. II, p. 247.)

"The Federal Government should make a detailed reassessment of the feed freight assistance policy in order to determine whether or not in its present form it is still benefitting Canadian agriculture to the greatest possible extent, or whether assistance could be more effectively applied to, for example, additional storage capacity in feeding areas or some other form of aid".

Assuming that the current program is continued the Commission recommended the following:

"1. The subsidy should not be restricted to rail and water carriage.

2. The assistance rate should not be higher than the freight rate available from the least cost carrier no matter which mode of transport or which routing is actually used.

3. The assistance rates on shipments to British Columbia should be based on the same formula as that used for Eastern Canada."

Commission's Criticism of Feed Freight Assistance Program.—Briefly the Report states that "The economic environment has altered greatly since the feed grain subsidy was first inaugurated." The Commission felt that a detailed reassessment was necessary because of the apparent absence of clear-cut objectives for a policy originated as a wartime measure and continuing on an ever-increasing scale 15 years after abolition of wartime price controls. This is entirely apart from the inefficient use of transportation resources created by subsidizing only rail and water movements and ignoring highway transport.

The Report points out that fundamental changes in agricultural production have taken place as a result of the subsidy. Less feed grain (other than corn) is grown in eastern Canada since the introduction of the subsidy. Poultry and egg production has expanded in British Columbia and the Maritime provinces and *"Milk production in Quebec has increased 54 per cent between 1941 and 1960 with virtually no increase in the number of milk cows"*.

The Commission considers that the benefits of the subsidy to the farmer-feeders have been reduced by the shift in the incidence of the subsidy. The Report suggests that the subsidy is shared, in addition to the consumers of feed grain, by the railway companies by virtue of unduly high rates maintained at the current level solely because of the exclusion of trucks from the subsidy and by the feed dealers by charging higher prices for feeds (Vol. II, p. 246).

The Report also points out that, despite the subsidy it is evident that comparative advantage is held by the Prairie provinces in the production of livestock and dressed meat, and that there has been little or no increases in livestock production in eastern Canada since the inception of the subsidy, (Vol. II, p. 246).

For these and other reasons the Commission obviously felt that entirely apart from national transportation policy feed freight assistance should be scrutinized carefully.

If the program is retained the Commission recommends bringing the trucks under the subsidy program and insisting that the subsidy payments be based on the lowest-cost carrier.

The Maritime Freight Rates Act.—The Report recommends that the 20 per cent reduction in freight rates within the Atlantic provinces be eliminated in all provinces except Newfoundland. While not recommending a specific course of action the Report seems to favor an increase in the outward subsidy which currently reduces rates by 30 per cent for that portion of the movement in Select territory.

The elimination of the internal subsidy will certainly stimulate the trucking industry in the Maritimes, which in the long run will reduce rates below the "normal" level.

Despite the 20 per cent subsidy within the Maritime provinces truck competition has increased substantially. The first agreed charge on fertilizers within the Maritimes was signed in 1957. In 1959 six more agreed charges were issued together with one each in 1960 and 1961. Now truck-competitive agreed charges on fertilizer blanket the Maritime provinces and there are truck-competitive rates on livestock, feed, grain, potatoes, etc.

While certain rates would be increased if the subsidy was removed it appears, because of the relatively short distances involved, that truck competition would hold down the level of the internal rate structure.

An increase in the subsidy on outbound shipments would certainly place the Maritime producers in a more favorable position vis-a-vis their competitors in Ontario and Quebec. More important in this context, however, is the proposed application of the M.F.R.A. subsidy to highway transport. The 30 per cent outbound subsidy places the trucks at a considerable disadvantage. If the subsidy is made applicable to trucks, as the Report recommends, a reduction in freight rates may be expected in shipments moving into central Canada.

The Bridge Subsidy.—The Report recommends the abolition of the "Bridge Subsidy". That so-called "Bridge Subsidy" (referring to the $7 million annual payment to the railways, allegedly to compensate them for track maintenance in Northern Ontario, although in fact a "roll-back" of noncompetitive rates) reduces the rates on commodities moving between eastern and western Canada and vice versa provided such rates have taken all the postwar percentage increases or are related to mileage scales which have done so. Because this segment of freight traffic is steadily diminishing the subsidy has risen from 13.4 cents per a basic rate of $3.00 per 100 lbs. in 1952 to 29.2 cents in 1962.

Two of the main movements which would be affected by the removal of the Bridge Subsidy are farm machinery from eastern to western Canada and alfalfa meal and dried ground grass from western to eastern Canada. For example, the reduction in rate on carloads of farm machinery as a result of the "Bridge Subsidy", destined to Regina is 30 cents per 100 lbs. and to Edmonton 33 cents per 100 lbs. As the average carload of farm implements weighed 12.7 tons in 1960[1] the saving per average car to Regina was $76.50; to Edmonton $84.15.

Proportionately the "Bridge Subsidy" is of greater importance to Manitoba than to Saskatchewan and Alberta as Table 2 indicates.

Table 2.—The Bridge Subsidy as a Percentage of Rates on Farm Machinery

Southern Ontario to:	Normal rate class 40 ¢/100 lbs.	Bridge Subsidy ¢/100 lbs.	Bridge Subsidy as percentage of normal rate
Winnipeg	248	27	10.9
Regina	313	30	9.6
Edmonton	391	33	8.4

Increases in certain rates as a result of the abolition of the "Bridge Subsidy" must be weighed against the enhanced competitive position of the trucks which will be able to compete more effectively for East-West traffic, tending to hold the freight bill constant.

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[1] *Waybill Analysis 1960*, Board of Transport Commissioners, Ottawa.

Conclusion.—The recommendations of the Royal Commission, if implemented will have a varying impact on agriculture and on the movement of agricultural commodities. There will be greater competition between the transportation media as the full effect of cost-oriented rate-making recommended by the Commission becomes apparent in the railway tariffs. The removal of the "traditional obligations of law and public policy" by compensation from the national purse will remove pressures for upward adjustment of freight rates. The long-run implications of plant rationalization, both for the railways and the grain gathering system in western Canada, can only have positive results.

It is clear that the most important readjustments of plant will be in the Prairie provinces and that they will be associated with grain. Despite the continuing technological changes and the more vigorous competitive environment recognized by the Report the net effect should bring greater stability to the transportation industry and to the costs of transporting agricultural commodities.

SOYBEAN PRICES: SOME RELATIONSHIPS BETWEEN CANADIAN AND UNITED STATES MARKETS

M. M. Roytenberg and R. G. Hughes

Canadian growers have in recent years produced from six to eight million bushels of soybeans. Grown principally in southwestern Ontario, this crop constituted 25 per cent of the total farm value of field crops in the major producing counties of Essex and Kent in 1959.

Soybeans from Canadian sources represent about 40 per cent of the total domestic disappearance of soybeans, in terms of beans. The remainder of our domestic needs are met from very sizable imports from the United States. In addition to supplementing domestic supplies, these imports make possible some exports of soybeans and soybean products, principally to Great Britain.

Canadian production is insignificant in relation to the U.S. crop. Production in the U.S. is roughly one hundred times that in Canada. The size of the U.S. crop and Canada's dependence on supplies from that country make for a close relationship between prices for soybeans in the major markets of both countries.

Soybeans, Production, Imports, Exports and Utilization 1956-57—1960-61

Crop year beginning August 1	Beginning stocks	Production	Imports	Exports	Net imports	Apparent domestic utilization
	— thousand bushels —					
1956–57	224	5,301	10,608	1,578	9,029	14,455
1957–58	99	6,508	10,786	2,120	8,660	14,779
1958–59	493	6,649	12,030	2,593	9,437	16,045
1959–60	534	6,828	13,706	2,567	11,139	16,362
1960–61	1,139	5,675	12,345	1,481	10,864	16,489

Source: *Grain Statistics Weekly* and *Trade of Canada*—Imports and Exports.

To find out more about U.S. soybean prices and their relationship to soybean prices in Canada, a study was made of the differences between the price series in the two countries. Price series for similar grades of soybeans at Chatham, the major producing center in Canada, and at Toledo, the major source of imports in eastern Canada, were compared in terms of Canadian funds.

The Canadian price has, with the exception of one interval during the period under study, 1957-61, been lower than the American price, comparing both in Canadian funds. This probably results from the greater transportation cost for soybeans moving by rail and by road from Chatham to Toronto and Hamilton (the major consuming areas) compared with movement costs from Toledo to Toronto. The respective rates are 31.2 cents a bushel for rail freight, and 15 cents a bushel by road, from Chatham to Toronto, compared with elevator, loading and shipping charges of 9 cents a bushel from Toledo to Toronto during 1960. In October 1961, the rail charge for soybean shipments from Chatham to Toronto was lowered to 14.1 cents a bushel, bringing it in line with the cost of road transport.

Over the study period, it seems reasonable to expect that an increasing proportion of Canadian soybeans moved from the producing area to the major markets by road transport. Therefore, in the most recent years the differential between shipment costs of beans from Canadian sources relative to those from the major market in the U.S. was probably close to six cents on the average. This may account for the trend toward a smaller differential between prices at Chatham and those at Toledo if we consider the portion of the marketing year when the differential is relatively large, and ignore the September-November period (Figure 1).

The relationship between prices in the two markets during the harvest period appears to be determined usually by factors other than those of prime importance during most of the marketing year. As shown in Figure 1, the difference between U.S. and Canadian prices is usually at its minimum during the harvest period. As indicated in Figure 2, this period usually coincides with the lowest prices of the marketing year. The decline, or disappearance, in the differential usually results from a greater fall in the Toledo than in the Chatham price.

The seasonal fluctuation in soybean prices in Canada (with the exception of the 1960-61 crop year) has been relatively small in recent years (Figure 2). This has encouraged Canadian producers to market a large proportion of their crop during the fall harvest period when prices are at their relative low point. Despite the heavier Canadian marketings during this period, prices of Canadian soybeans, in four out of the five years shown in Figure 1, have held up relative to prices in the United States. Indeed, for a period of generally six to eight weeks, when the differential declines sharply or disappears, owing to the higher transport cost of Canadian soybeans, purchasers of Canadian soybeans are willing to pay a premium in terms of landed cost for these beans.

The willingness of purchasers to pay more for Canadian soybeans landed in Toronto at this time than for similar soybeans from Toledo may be explained in large part by the efforts of Canadian exporters and processors to obtain sufficient supplies of Canadian beans to meet their domestic commitments and to fulfil the Canadian content requirements for soybean and soybean product exports to Great Britain. A Canadian content of 25 per cent is required, so that exports may qualify for the free entry available to Commonwealth suppliers to Great Britain.

During the 1960-61 crop year there were major fluctuations in the price differential between the Toledo and Chatham prices. Both prices were higher but with the American price showed more variability. Much of the price instability during the year resulted from an apparent glut in the market for edible

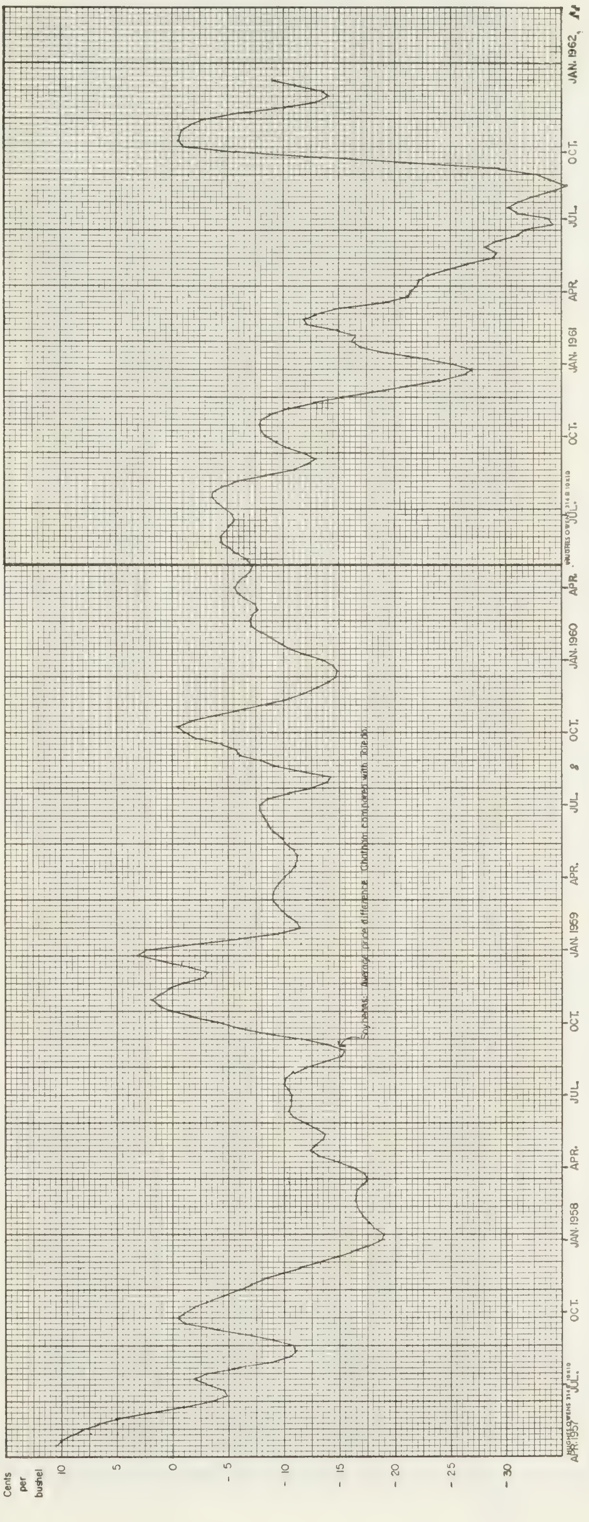
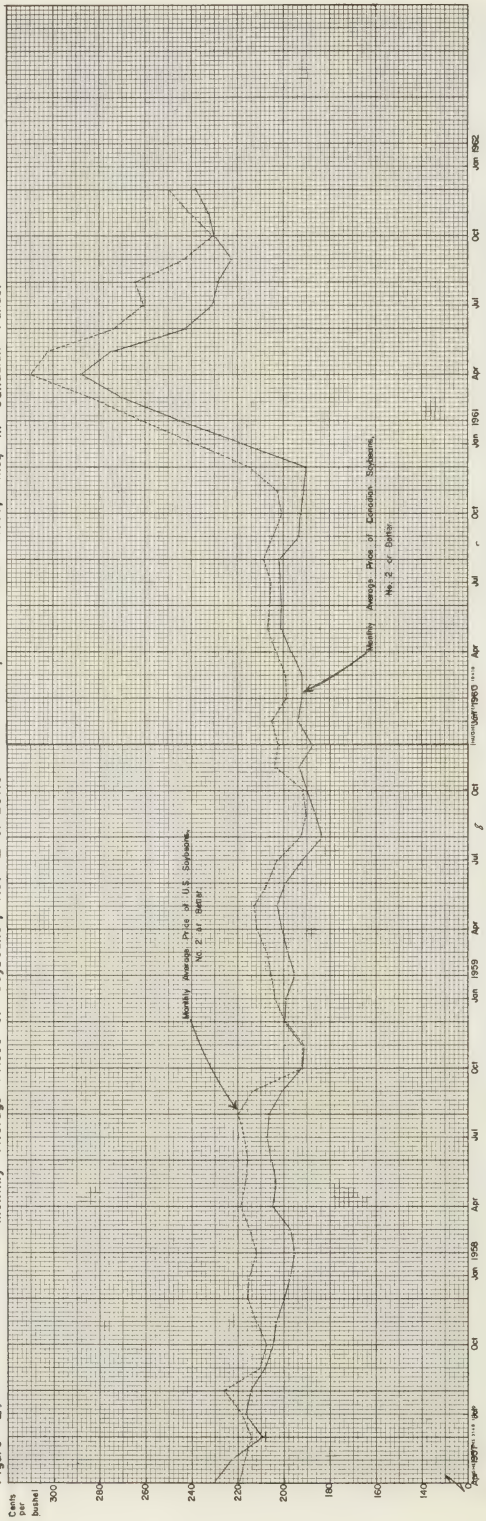


Fig. 1 Soybeans, No.2 or better: Centred four-week moving average price difference: Chatham compared with Toledo: 1957-1961 (in Canadian dollars)

Figure 2. Monthly Average Prices of Soybeans, No. 2 or Better: Chatham, Ontario and Toledo, Ohio, In Canadian Funds.



oils, followed by a shortfall in world soybean production. The latter resulted primarily from a significant reduction in the soybean crop in the Chinese mainland.

During 1961-62, it appears that the pattern of price relationships prevailing before 1960-61 has re-established itself. Price levels are higher, however, as a result of the increase in the U.S. support price from $1.85 to $2.30 a bushel. Prices have recovered from harvest period low points as the effects of the U.S. support program have made themselves felt. While price differentials declined in the usual way, with a record crop in Canada as well as in the U.S., the period during which purchasers were willing to pay a premium in terms of landed cost for Canadian soybeans, relative to those from the U.S., was shorter than in other years since 1957.

CHILDREN OF RURAL FAMILIES OF ONTARIO AND PRINCE EDWARD ISLAND

H. C. ABELL AND D. DYCK

Detailed information on families in rural areas of Ontario and Prince Edward Island was obtained in studies conducted in these provinces during 1959[1]. The study samples included 352 households in Ontario and 288 in Prince Edward Island. This article attempts to point out and analyze some of the family characteristics, and the trends in the movement of the rural population as indicated by the movement of adult children in the survey families.

The provinces of Ontario and Prince Edward Island differ considerably in size of population and degree of industrial development. According to the Census of 1956, Ontario's total population is about 55 times as large as that of P.E.I., and the farm population in Ontario is about 12.6 per cent of the total whereas in P.E.I. it is about 43.6 per cent. In view of conditions prevailing in agriculture, differing trends in population movements would be expected between these two provinces. According to the data collected, the major variations between the families in the two provinces appear to be in regard to (1) size, (2) level of education and age when leaving school, (3) location of children, and (4) occupation of children.

Distribution of Children in Families.—The data presented in Table I suggest that differences exist in the size of families (in terms of number of children) between areas within the rural or agricultural sector of Canada's population; the 352 households in the Ontario study averaged three children whereas the 288 P.E.I. households had four children on the average. Thus, 74 per cent of the children in the P.E.I. households were concentrated in families of five or more young people as compared with 36 per cent in the Ontario households.

In both studies it was found that most of the children lived at home, but the proportion varied from 75 per cent in the Ontario families to 64 per cent for the P.E.I. families. The children aged 15 years or younger (mainly preschool and school children) and residing at home comprised 57 per cent of the total in the Ontario families. In the P.E.I. families this age group comprised 48 per cent.

Education of Children.—Data in Table 2 indicate that children in the Ontario families had completed more grades in schools, on the average, than children in P.E.I. families. (It should be noted, however, that the school systems in the two provinces are not entirely comparable; e.g. the P.E.I. system does not

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[1] These studies are *"A Special Study of Ontario Farm Homes and Homemakers"*, and *"A Socio-Economic Study of Rural Areas of Prince Edward Island"*; they were conducted by the Economics Division in co-operation with the Departments of Agriculture of the provinces of Ontario and P.E.I., respectively. They will be referred to as the Ontario study and the Prince Edward Island study.

Table 1.—Number and Percentage Distribution of Children in Farm Households, Ontario and Prince Edward Island Studies, 1959

Number of children per household	Per cent of households		Per cent of total children in households	
	Ontario	Prince Edward Island	Ontario	Prince Edward Island
None	7	22[a]	None	None
1	12	11	4	3
2	24	8	16	4
3	27	14	27	11
4	13	8	17	8
5 or 6	11	18	19	27
7 to 12	6	18	17	42
13	0	1	0	5
Total	**100**	**100**	**100**	**100**

Total children: Ontario households—1,065; 556 males, 509 females.
Prince Edward Island households—1,083; 564 males, 519 females.

[a] 16 per cent were bachelor households.

Table 2.—Formal Schooling Completed by Adult Children, Grades by Proportion of Children, Ontario and Prince Edward Island Studies, 1959[a]

Grades completed	Males		Females		All adult children	
	Ontario	Prince Edward Island	Ontario	Prince Edward Island	Ontario	Prince Edward Island
	— per cent —					
Less than 8	9	29	*	16	5	23
8	31	33	13	23	22	29
9 or 10	28	27	21	44	25	34
11 or 12	21	6	27	8	24	7
13	3	....	3	....	3	....
Grade 12 or 13 plus:						
(1) two years or less additional training	5	3	28	6	16	4
(2) three years nursing training, qualifying for registered nurse	....	....	7	2	3	1
(3) a university degree	3	2	1	1	2	2
Total	**100**	**100**	**100**	**100**	**100**	**100**
Average number of grades completed[b]	10	8	12	9	11	9

[a] Only grades completed and formal training obtained beyond grade 12 for P.E.I. children and grades 12 and 13 for Ontario children are included in these data.

[b] Each year of schooling, after grade 12 or 13 is considered as one grade. Average grades are rounded to the nearest whole number.

* Less than one half of one per cent.

include Grade 13). In general, a smaller proportion of Ontario than of P.E.I. children had discontinued school before completing grade eight, and a larger proportion had completed 11 or more grades. Thirty-six per cent of the Ontario females had acquired some training, after grade 12 or 13, whereas only nine per cent of the P.E.I. females had obtained schooling beyond grade 12. Similar proportions of each sex in the two provinces had a university degree. Although the average level of education attained (in terms of grades completed) by all Ontario children was higher than that for all P.E.I. children (11 grades as compared with 9), the females in both provinces had completed more grades than the males.

Age, Sex and Location of Adult Children.—Some of the children aged 16 years or older were still attending school. In Ontario families 21 per cent of this age group was comprised of students (16 per cent resided at home), whereas in P.E.I. families the proportion was only seven per cent (all except two resided at home). The data in Table 3 indicate the proportions of these children, by sex and selected age categories, that resided at home, elsewhere in the home province, in other Canadian provinces and in other countries.

In general, the children in P.E.I. families tend to leave home at a younger age than those in Ontario families; more of the children under 25 years of age, and of both sexes, in P.E.I. than in the Ontario families resided away from home. The difference is particularly large in the case of female children; the proportion remaining at home in Ontario is about twice as large as in P.E.I. for each of the age groups 16-20 and 21-24 years. In part, the greater movement of P.E.I. children in these age groups probably comes from the fact that a smaller proportion of them attend school after completing grade eight; 48 per cent of the P.E.I. children had completed more than eight grades compared

Table 3.—Location of Children 16 Years of Age or Older and Out of School, Proportions by Sex and Age Categories, Ontario and Prince Edward Island Studies, 1959

Age and sex	Location						Number of children
	At home	Elsewhere in the province	In other Canadian provinces	In other countries	Unknown	Total	
	— per cent —						
16–20 years							
Ontario............male	80	6	11	3	0	100	35
female	85	12	0	3	0	100	35
P.E.I..............male	57	13	30	0	0	100	53
female	42	32	10	13	3	100	38
21–24 years							
Ontario............male	76	15	6	3	0	100	33
female	21	73	4	2	0	100	48
P.E.I..............male	39	18	39	2	2	100	54
female	11	41	37	11	0	100	46
25 years or older							
Ontario............male	30	58	9	3	0	100	113
female	2	86	9	3	0	100	99
P.E.I..............male	29	36	31	4	0	100	174
female	5	56	31	8	0	100	156
Total							
Ontario............male	48	40	9	3	0	100	181
female	23	68	6	3	0	100	182
P.E.I..............male	36	29	32	3	*	100	281
female	12	49	29	10	*	100	240

* Less than one half of one per cent.

with 73 per cent of the Ontario children. Another factor in the smaller movement of Ontario rural youth at this age may be that more nonfarm jobs are available within commuting distance, and that commuting is more encouraged by lower car operating costs in Ontario than in P.E.I. Moreover, the pressure for children to leave home is probably greater in P.E.I. than in Ontario, because of the larger size of family and the lack of modern facilities on many P.E.I. farms; for example, it was found that only 53 per cent of the homes in P.E.I. had electricity and 33 per cent had a telephone whereas in Ontario the proportions were 99 and 94 per cent.

Regarding the destination of the children when leaving home, the data in Table 3 indicate that only 10 per cent of the children aged 16 years or over, from Ontario families, moved out of the province. In contrast, about 37 per cent of the P.E.I. children had left the Island and most of these had located in Ontario. Relatively more of the female than of the male children had moved out of their home province, and for P.E.I. children this was the case for each age group. A major factor in the movement of young people out of the Island is probably the fact that more economic opportunities are available (especially in the nonfarm sector of the economy) outside the province.

Occupation or Employment of Adult Children.—Sons engaged in farming, either full-time or in combination with nonfarm work, comprised the largest group of adult males when grouped by occupation or employment; 40 per

Table 4.—Occupation or Employment of Adult Children, Percentage of Children by Sex, Ontario and Prince Edward Island Studies, 1959

Type of occupation or employment	Males		Females	
	Ontario	Prince Edward Island	Ontario	Prince Edward Island
	— per cent —			
1. Agriculture				
a) Farming	33	30	—	—
b) Farming combined with nonfarm work	7	6	—	—
2. Unskilled work (e.g. truck driver, factory or construction labor, waitress, garage attendant, etc.)	23	21	4	3
3. Skilled and semi-skilled work (e.g. carpenter, mechanic, machinist, welder, mason, factory foreman, laboratory assistant, technician, nurse's aid)	14	19	2	2
4. Clerical office work	6	4	17	7
5. Professional (e.g. teacher, registered nurse, member of a religious order, medical doctor)	4	4	18	6
6. Managerial (e.g. manager of a construction firm or other business)	4	1	1	1
7. Service occupations (e.g. armed services, domestic and personal service)	3	6	2	6
8. Sales agents or store clerks	3	2	2	2
9. Fishing	0	2	—	—
10. All other (including landscapers, food graders and inspectors, elected government official)	1	2	0	0
11. Married or widowed homemaker without paid employment	—	—	53	71
12. Unknown, unemployed or handicapped	2	3	1	2
Total	**100**	**100**	**100**	**100**

cent of the male children in the Ontario families and 36 per cent of those in P.E.I. families were thus engaged (Table 4). The type of work performed most frequently in combination with farming was of the unskilled variety, e.g. truck driving, construction or factory labor, and garage help as attendant. But in P.E.I. several boys were also engaged in fishing or carpentry.

The proportion of the male children in the unskilled, semi-skilled, clerical, and managerial occupations was higher for Ontario, in each case, than for P.E.I. However, more of the P.E.I. than of the Ontario sons were employed at skilled and semi-skilled jobs (mainly carpentry in P.E.I.) and in the service type of jobs (which include the armed services). Proximity to the sea probably accounts for the fact that two per cent of the P.E.I. male children were fishing for their livelihood: none were doing so in Ontario.

Regarding the female children, 17 per cent of those in Ontario families were engaged in clerical jobs and 18 per cent in professions. Most of these daughters were doing clerical office work, teaching or nursing. In the P.E.I. families, only seven and six per cent respectively, of the female children were in these occupational groups; and most of these, too, were teaching, nursing, or doing clerical office work. Married daughters comprised 71 per cent of the total in Ontario and these included 18 per cent who had paid employment outside of their homes. As in the case of the unmarried daughters, most of the married women were employed in professional or in clerical work. In P.E.I., 74 per cent of the female children were married (one per cent were widowed), and only four per cent had paid employment outside of the home; four were in clerical work, one was a store clerk, one was teaching, one was a nurse's aid, one was in the army and one worked as a waitress.

In general, much higher proportions of the Ontario than of the P.E.I. female children were engaged in professional and clerical occupations, but relatively more of the P.E.I. children were employed at skilled, semi-skilled and service (especially the armed services) occupations. In part, this is probably a reflection of the higher formal education obtained by Ontario youth. Relatively more of the Ontario than of the P.E.I. females were in paid employment after marriage. This situation may be partly due to availability of jobs suitable for women in Ontario.

Summary

1. The rural households in P.E.I. had more children (4) on the average than those in Ontario (3), but more of the P.E.I. households were without any children and more of them had larger families of five or more.
2. Children in P.E.I. rural families (female in particular) left home at a younger age than those in Ontario rural familities, and more of them (37 per cent as compared with 10 per cent) moved out of their home province.
3. In both provinces the female children had obtained more formal education than the males, on the average, but children of both sexes in Ontario had completed more grades than those in P.E.I. These differences in education are reflected in the types of occupation or employment in which these people are engaged. Relatively more of the Ontario than of the P.E.I. females were in clerical and professional positions, and more of the males were in the clerical and managerial occupations.
4. Thirty-three and 30 per cent respectively of the Ontario and P.E.I. male children were engaged full-time in farming, and another seven and six per cent (respectively for Ontario and P.E.I.) did farm work in combination with nonfarm work.
5. More of the female children in Ontario families were in paid employment after marriage (18 per cent as compared with four per cent of the P.E.I. female children).

URBAN EXPENDITURES FOR CERTAIN MILK PRODUCTS, 1957

CHARLOTTE I. JOHNSTON

Unpublished data on fluid milk[1] and cream, canned and powdered milk of an expenditure survey conducted by the Dominion Bureau of Statistics were analysed by the Economics Division, Department of Agriculture.

The survey was carried on throughout 1957 in the metropolitan areas of Halifax, Montreal, Toronto, Winnipeg and Vancouver. It was limited to families of two to four adults, two or three adults with one child[2], and two adults with two to four children, having annual incomes from $2,500 to $7,000. Each family recorded its purchases for two weeks.

Although only expenditure figures were sought the records provided accurate data on the quantity of fluid milk purchased. The quantity purchased per person was 2.45 quarts a week, or 328 pounds a year. In 1953 and 1955 in the same cities, samples of families similar in composition and income, had purchase rates of 2.3 and 2.4 quarts, respectively, per person per week.

Consumption of milk per person was related to income, family type, age of family head and education of family head.

The divergence between classes in rates of fluid milk purchased was greatest among the family types, where the range was from 2.7 to 2.0 quarts per person per week. The groups of families with more than one child had the highest rates and the all-adult families bought least per person.

Among the age groups the families with the youngest heads bought most fluid milk per person and the rate decreased as age increased. Number of children per family also decreased with age of family head except from the group with youngest heads to the next.

As number of years of school attendance by the family head increased from the first (under 9 years) to the third (14 to 16 years) group purchases of fluid milk per person increased slightly. However, the rise may have been due to the increased numbers of children per family from the first to the third education group.

When the families were classified on the basis of family income the groups with lowest incomes, $2,500 to $2,999, and with highest incomes, $6,000 to $7,000, had the lowest rates of purchase of fluid milk, 2.34 quarts per person per week. Those groups also had the lowest number of children per family. The group which bought most milk per person, 2.61 quarts a week, was low in the income scale, $3,500 to $3,999, but had the highest number of children per family. Thus family income appeared to have very little influence on the rate of fluid milk bought, whereas the number of children was an influential factor[3].

The survey families were distributed as follows by number of quarts of fluid milk bought per person per week: less than 1 quart, 7 per cent; 1.0 to 1.9, 27 per cent; 2.0 to 2.9, 36.5 per cent; 3.0 to 3.9, 21 per cent, 4 or more quarts, 8.5 per cent.

Those who bought less than one quart paid twice the average amount spent for cream but otherwise expenditure for cream bore little relation to quantity of milk purchased.

---

[1] Standard, high fat, low fat, skim, chocolate drink and buttermilk.

[2] 15 years of age or younger.

[3] Consumption by families with incomes under $2,500 may have been affected by their low income, however. From a nationwide survey in the United States in 1955 it was concluded that "There was some difference in the average amounts of fluid milk consumed per person in low-income (under $3,400) households compared with higher income households, but there was virtually no difference in the average consumption between medium and high income households." (United States Department of Agriculture. *Income and Household Size. Their Effects on Food Consumption.* Washington, D.C., 1959. Marketing Research Report No. 340. p. 18).

The expenditures for canned and powdered milk by the group buying less than one quart of fluid milk per person per week were likewise at least twice the average expenditures for those products. As families bought fluid milk at increasingly higher rates expenditures for canned and powdered milk decreased but irregularly.

The expenditures by each class of family for two per cent milk, skim milk and buttermilk were added. Chocolate drink, also of low fat content, was not included with the others as it is probably bought for its flavor, rather than its lack of fat. Among the cities the expenditure for the three low fat milks was greatest in Toronto where it amounted to about four cents per person per week. The lowest expenditure, little more than half a cent, was in Montreal. A rise in expenditure for the three kinds of milk could be seen as incomes rose. Less than one cent was spent by families with incomes under $3,500 whereas those in the $6,000 to $7,000 bracket spent nearly four cents. The most noticeable association was with education of the family head. As number of years of school attendance increased through the four groups expenditure on low fat milk rose from 1.4 to 6.3 cents per person per week.

Less than 40 per cent of the survey families bought cream in the two-week reporting period. The mean expenditure for it was 4.5 cents per person per week. The highest expenditure rate of the cities was in Winnipeg where almost 60 per cent of the families reported buying it. Expenditure per person increased generally with rising family income, and as the age of the family head rose. As numbers of children in the family increased expenditure per person decreased.

About one-third of the survey families bought some canned milk during the period of report. Average expense for it was 3.7 cents per person per week. The rate was highest in Vancouver. Families of two adults with less than three children spent more per person for canned milk than did other family types.

Only about seven per cent of the families bought powdered milk in the two weeks and their purchases averaged only one cent per person per week. More was spent per person for powdered milk in Vancouver than in the other cities.

Money spent on fluid milk and cream, canned and powdered milk by the survey families was equal to nearly 10 per cent of the total amount of money they spent on food. The widest range in the percentage spent on milk products was found when the families were classified as to family type. Families with three or four children spent 13 per cent of their food money for the four products, whereas those of two adults spent less than 7 per cent.

The milk purchased plus the computed milk equivalent of the cream, canned and powdered milk bought by each[1] family were compared with the quantity of milk recommended by Canada's Food Rules[2] for the individuals of the family. On the whole about 20 per cent of the families bought less than 75 per cent of the recommended quantities. A higher proportion of the Montreal families than of those in the other cities were in that low category. Of the various classes of families those with the greatest proportions below 75 per cent of the recommended allowances were certain family types, those of four adults, of three adults and one child and the largest families, of two adults and four children. The first two of those three classes contained larger numbers of older adolescents (16 to 20) per family than did other family types.

Thus some particular classes of families would appear to benefit from increased intakes of dairy products; the one-fifth of the total urban families surveyed who would do so is not negligible.

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[1] A number of families were omitted because of uncertainties connected with their data for this computation.

[2] *Canada's Food Guide*, September, 1961, recommends similar quantities.

PUBLICATIONS OF THE ECONOMICS DIVISION

Abstract of Co-operative Legislation in Canada. Ingersoll, H. K. Ottawa. February 1962. pp. 66.

A manual designed to provide the reader with handy reference and comparison material on co-operative legislation in Canada. It replaces the *"Abstract of Canadian Provincial Legislation on Co-operatives,"* published in 1958.

Marketing Boards in Canada—1960 National Summary. Heighton, V. A. Ottawa. March 1962. pp. 7.

The fourth in a series of annual reports on activities of provincial agricultural marketing boards in Canada.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Trends and Forces of World Sugar Consumption. Viton, A. and F. Pignalosa, Commodities Division, FAO, Commodity Bulletin Series, No. 32. Rome. 1961. pp. viii + 88.

A study which traces the trends in consumption of sugar over the last two decades, examines the factors determining consumption, and gives some indications of future trends.

The World Coffee Economy. Commodities Division, FAO, Commodity Bulletin Series, No. 33. Rome. 1961. pp. viii + 76.

A revised and amplified version of a study made in 1959. It is chiefly concerned with production, exports, imports, consumption economic factors affecting the coffee situation, and production and consumption prospects.

A Handbook of Public Administration—Current concepts and practice with special reference to developing countries. Department of Economic and Social Affairs. New York. 1961. pp. vii + 126.

A handbook that reviews many aspects of public administration such as organizational analysis and structure, methods and material, the career service, personnel administration, human relations, decentralization, budget and financial administration, research and planning, decision making, and public relations and reporting. It also comments on administrative improvement as an essential condition to the implementation of national development programs and suggests to governments "the most valuable fields of international experience in administration on which they can draw through the" U.N. "technical assistance programme."

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION
A. H. TURNER, Director

AUGUST 1962 **Vol. XXXII No. 4**

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G. P. BOUCHER, Editor

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	224.8	179.6	270.0	253.2	281.0	226.7	129.2	124.0	173.1
1961										
Jan.	231.7	233.2	189.3	277.1	261.3	273.0	223.5	129.2	124.4	165.8
Feb.	232.1	232.7	189.0	276.3	262.1	....	....	128.9	124.0	166.7
Mar.	231.3	228.4	188.2	268.6	259.8	....	....	129.1	124.0	166.0
April	230.9	225.1	188.5	261.7	255.6	284.7	226.6	129.1	123.9	169.2
May	231.2	225.8	187.3	264.4	254.5	....	....	129.0	123.2	169.4
June	231.4	228.6	192.5	264.7	257.1	....	....	129.0	123.5	173.3
July	234.5	228.3	191.3	265.3	257.4	....	....	129.0	124.9	173.4
Aug.	234.5	216.9	168.5	265.4	244.7	289.0	230.0	129.1	125.3	176.4
Sept.	235.3	219.0	165.7	272.3	247.1	....	....	129.1	123.2	178.1
Oct.	235.3	220.3	165.3	275.3	245.7	....	....	129.2	123.3	177.9
Nov.	235.3	219.6	164.2	275.0	245.9	....	....	129.7	123.6	180.1
Dec.	236.5	220.0	165.8	274.2	247.0	....	....	129.8	124.5	180.5
1962										
Jan.	237.0	218.9	166.7	271.0	247.7	281.8	233.6	129.7	124.8	179.8
Feb.	237.2	219.2	167.5	270.8	246.6	....	....	129.8	125.0	182.5
Mar.	237.1	217.3	167.1	267.5	246.6	....	....	129.7	124.4	184.3
April	237.4	219.2	166.4	272.0	247.0	291.6	235.8	130.3	125.8	184.0
May	239.1	222.8	168.9	276.7	248.8	....	....	130.1	124.5	185.5
June	240.3	228.8	172.0	285.7	252.5	....	....	130.5	125.6	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Tariff Increases and other Governmental Financial Measures.—On June 24 the Prime Minister told the country that "a comprehensive program" had "become necessary to relieve the pressure on the Canadian dollar in the exchange field, to bring about greater stability in our international transactions and to strengthen our exchange reserves", and that the government was therefore "enforcing a program designed to meet the needs of the situation".

> The first measure taken "consists of a temporary, graduated surcharge on certain classes of imports which will be imposed within the scope permitted by the existing authority granted by Parliament. Approximately one-half of all imports will be exempted from any surcharge. These consist in the main of basic foodstuffs, raw materials, industrial components and agricultural machinery which either enter directly into the costs of Canadian production or are highly essential for other reasons, or enter directly into the cost-of-living of the average Canadian. The 5 per cent surcharge will be applied on categories amounting to some $2,300,000,000 of annual imports of a less essential nature, for some of which surplus capacity exists in Canada and for others of which alternative Canadian products are available. These two categories, that is those exempt and those subject to the 5 per cent rate, include some 87 per cent of imports at recent levels. A 15 per cent surcharge will be imposed on a group of imports which includes such luxury items as champagne, wines and spirits, jewelry, perfume, etc., totalling some $150,000,000 of annual imports. A 10 per cent surcharge will be imposed on the remaining group of imports, amounting to $650,000,000 annually at recent levels, for most of which it is possible for consumers to defer their purchases or for which Canadian production is now available." . . .
>
> "A second temporary measure designed to conserve foreign exchange relates to the tourist exemption under which Canadians traveling abroad are allowed to bring into Canada, duty-free, $100 worth of goods once every four months or, if they travel overseas, $350 worth once every 12 months." . . .
>
> "Under the temporary order returning tourists will be allowed to bring back to Canada duty free $25 worth of goods three times a year or, in the case of overseas visitors, $100 once a year. This temporary reduction of the exemption will not apply to Canadian tourists who are already outside the country." . . .
>
> "The third course of action relates to the important matter of Government expenditures. We have recently conducted a careful review of the planned expenditures, covering all departments and activities of government. As a result, the Government has decided on a program involving reductions in expenditures amounting to $250,000,000 in a full fiscal year." . . .
>
> "Canada's official holdings of gold and U.S. dollars now stand at approximately $1,100,000,000. To reinforce these reserves immediately the Government and the Bank of Canada have taken a number of important steps. Canada is exercising its borrowing rights with the International Monetary Fund and is drawing $300,000,000 in foreign exchange. The Government has arranged a line of credit of $400,000,000 from the Export-Import Bank in Washington. The Bank of Canada has entered into a reciprocal currency arrangement with the Federal Reserve

> System of the United States in the amount of $250,000,000, and has made a comparable arrangement with the United Kingdom in the amount of $100,000,000. This international financial support adds well over $1,000,000,000 in cash and standby credits to Canada's exchange reserves but by no means exhausts the possibility now open to Canada to reinforce her reserve position."

Gross National Product.—Canada's G.N.P. continued to rise in the first quarter of 1962. The seasonally adjusted annual rate of $38.6 billion was about two per cent over the rate for the fourth quarter of 1961. In constant dollars, gross national expenditure is estimated to have risen about 1.5 per cent. About half of the increase in value is of a statistical rather than of an economic nature since the 1962 crop estimate assumes a normal harvest in contrast to the poor harvest of 1961.

Consumer spending was the chief factor contributing to expanded economic activity. Additions to business inventories, which had greatly added to the demand on current production in the fourth quarter of 1961, ceased to exert an expansionary influence. Government expenditure on goods and services gave added support to the rising level of economic activity.

Gross fixed capital formation exerted little influence on economic expansion as the large increase in housing was partly offset by lower outlays for plant and equipment. The deficit on current international transactions widened, payments on invisibles continued to exceed receipts and the surplus on merchandise account, which had occurred in 1961, dwindled in the first quarter of 1962; exports failed to maintain the rising rate which had characterized 1961 and imports remained at the same level.

Comparative levels of the components of gross national expenditure, in millions of dollars and at seasonally adjusted annual rates, were as follows:

	Fourth quarter	First quarter	Percentage change
Consumer expenditure	24,600	25,312	2.9
Government expenditure	7,384	7,496	1.5
Residential construction	1,476	1,548	4.9
Non-residential construction	2,760	2,760	——
Machinery and equipment	2,464	2,444	−0.8
Value of physical change in business inventories	504	72	[a]
Farm inventories and grain in commercial channels	−596	−132	[a]
Exports of goods and services	7,956	7,832	−1.6
Imports of goods and services	−8,812	−8,976	1.9
Residual error	196	260	[a]
Total G.N.E.	**37,932**	**38,616**	**1.8**

[a] Percentage change not meaningful.

External Trade.—Canada's commodity exports rose to $461.3 million in April 1962 from $449.2 million in April 1961 while imports rose to $492.7 million from $437.4 million. So the country had an import balance of $31.4 million in April this year in contrast with the export balance of $11.8 million in April last year.

January-April exports rose to $1,856.7 million in 1962 from $1,713.2 million in 1961; imports rose to $1,968.1 million from $1,718.8 million. The import balance increased to $104.2 million from $5.6 million.

Comparative figures on exports to various countries or groups of countries, in million dollars, are as follows:

	April		January–April	
	1962	1961	1962	1961
Exports				
United Kingdom	60.2	68.3	253.7	289.4
Other Commonwealth and Preferential	22.8	26.3	92.8	115.4
United States	288.2	240.7	1,142.2	917.2
Others	90.1	113.9	368.0	391.2
Totals	**461.3**	**449.2**	**1,856.7**	**1,713.2**
Imports[a]				
United Kingdom	41.8	42.7	178.9	184.4
Other Commonwealth and Preferential	23.3	18.7	78.6	70.0
United States	352.3	302.7	1,415.2	1,197.2
Others	75.3	73.2	295.3	267.2
Totals	**492.7**	**437.4**	**1,968.1**	**1,718.8**

[a] Estimates only; subject to revision. Figures may not add due to rounding.

Population.—Returns from the 1961 Census indicate that Canada's population was distributed among rural, rural farm, and rural nonfarm, in 1961 and in 1956, as follows:

	Numerical distribution		Percentage distribution	
	1961	1956	1961	1956
Total population	**18,238,247**	**16,080,791**	**100.0**	**100.0**
Total rural	**5,537,857**	**5,365,936**	**30.4**	**33.4**
farm	2,072,785	2,631,587	10.8	16.4
nonfarm	3,465,072	2,734,349	19.6	17.0
Total urban	**12,700,390**	**10,714,855**	**69.6**	**66.6**

A large part of the decline in the rural farm population can be attributed, in part, to the new Census definition of a farm. The number of farms, according to the new definition, has declined by about 94,000. Estimates indicate that nearly 41,000 of the decline resulted from the change in definition; the remainder may be accounted for the continued migration from farms.

Economic Development.—The Minister of Agriculture announced, on May 1, 1962, that Canada may spend over $100 million on an integrated program of rural development over the next three years. Subject to parliamentary approval, the federal government will provide $50 million under the Agricultural Rehabilitation and Development Act between June 1, 1962 and March 31, 1965. The remainder will consist of local and provincial contributions.

Farm Cash Income.—Cash income received by farmers from farming operations (excluding supplementary payments) totaled $605.3 million in the first quarter of 1962, compared with $665.0 million in the first quarter of 1961 and $595.8 million in the corresponding quarter of 1960. These estimates include cash income from the sale of farm products, Canadian Wheat Board participation payments on previous years' crops, net cash advances on farm-stored grains, and deficiency payments made under the farm prices support program.

Farmers also received $65.9 million as supplementary payments under the provisions of the Prairie Farm Assistance Act and the Western Grain Producers' Acreage Payment Plan. In the first quarter of 1961 the supplementary payments had totaled $6.9 million and most of this amount had been paid out under the provisions of the P.F.A.A.

A BRIEF REVIEW OF CANADIAN EGG MARKETING POLICIES

J. T. HILL

To stabilize the Canadian economy during the war years the Government set up the Wartime Prices and Trade Board under the authority of the *War Measures Act*. This Board was established on September 3, 1939 to prevent inflationary prices for food, clothing and other necessities so as to avoid the hoarding of goods needed for the war effort, encourage the building up of adequate supplies of all needed goods and ensure an equitable and efficient distribution of these goods among all sectors of the economy. As costs of production tended to push prices higher, ceilings were set for the prices of many goods and services on December 1, 1941. The maximum price allowed was based on the highest price received by producers during the September 15-October 11, 1941 period. Certain commodities, including poultry and eggs, were not subject to this measure. Rationing was applied to beef and lamb in 1942, and veal and pork in 1943. Poultry meat escaped rationing and the demand for all types of poultry was thus stimulated; cut-up poultry, barbecues, cooked and eviscerated birds were among the new selling techniques introduced.

The United Kingdom Egg Contracts, 1945-49.—The egg industry reached what was thought to be its maximum size by the end of 1945. Production had reached a total of 368 million dozen of which slightly less than one-third had been exported, primarily to the United Kingdom. With the end of the war, the shortage of food in the U.K. was still serious and the British Ministry of Food entered into a contract arrangement with the Canadian government which called for the export of a large volume of Canadian eggs to the British Isles during the following years. The Wartime Prices and Trade Board was generally responsible for imports and distribution and since the Department of Agriculture was responsible for production and exports, it was left to the Special Products Board,[1] an agency of the Department, to handle the purchase of eggs for export.

In 1946 the egg contract, which called for the export of at least 85 million dozen, fell short by about 15 million dozen. In 1947 an additional 83 million dozen eggs were called for along with 12 million pounds of dressed poultry. This contract was fulfilled; it involved about 1.8 million cases of shell eggs, 6,000 tons of sugar-dried eggs, 2,000 tons of frozen melange and 12 million pounds of dressed poultry. In addition, the United States received 10 million pounds of live poultry and 0.8 million pounds of dressed poultry, and Newfoundland, the British West Indies and others 0.7 million pounds of poultry.

In 1948 the demand for eggs remained strong in both the domestic and export markets. A two-year contract (Feb. 1, 1947 to Jan. 31, 1949) with the British Ministry of Food called for the shipment of 2.5 million cases of eggs in 1948, including fresh and storage eggs, egg powder and frozen melange. The price which the Special Products Board paid to the trade for the products, to fill the contracts, then served as a floor for the domestic market.

Exports of poultry meat in 1948 were well above those of 1947, primarily because of the reduction in the United States tariff in accordance with the Geneva Trade Agreements. All but 36,000 birds, from a total of 5.6 million, found their way to the U.S. as well as 13 million pounds of dressed poultry from a total of 14.7 million pounds exported from Canada.

---

[1] Set up under the authority of War Measures Act, along with the Agricultural Supplies Board, the Meat Board, the Dairy Products Board and the Agricultural Food Board to formulate and enforce production policies and to acquire and move various products to the U.K. and other Allied countries.

In 1949 domestic production of eggs declined about seven per cent and exports were reduced by almost 50 per cent. Domestic consumption in 1949 dropped to a record low of 19.3 dozen per capita (Table 1). In September wholesale prices for Grade "A" Large stood at 71.5 cents a dozen. However, with the expected termination of the final U.K. contract on December 31, prices dropped, dealers hesitated to buy on a declining market and stocks accumulated in grading stations. Poultry exports declined greatly in 1949, although production increased and consumption remained at about the same level as in previous years. Turkey production increased from 35.1 million pounds in 1948 to over 42 million pounds in 1949 (dressed weight). In 1949 the entry of Newfoundland into the Canadian Confederation and the subsequent removal of tariff restrictions raised the possibilities of increased marketings of eggs and dressed poultry from the Maritime provinces to the new market.

Table 1.—Eggs: Production, Stocks and Domestic Disappearance, Canada, 1926-1961

Year	Production	Stocks-Jan. 1	Domestic disappearance	
			Total	Per capita
	— thousand dozen —			— dozen —
1926	216,465	4,439	221,294	23.4
1927	229,853	2,313	232,522	24.1
1928	242,741	3,773	243,593	24.8
1929	247,245	4,950	249,188	24.8
1930	250,500	2,946	249,419	24.4
1931	257,631	7,920	258,404	24.9
1932	249,961	6,661	251,975	24.0
1933	242,754	4,492	242,171	22.8
1934	243,772	3,116	239,697	22.3
1935	244,040	5,327	244,832	22.6
1936	239,994	3,599	238,799	21.8
1937	239,943	4,460	238,920	21.6
1938	233,899	4,475	233,432	20.9
1939	242,237	3,604	240,907	21.4
1940	242,269	4,388	227,521	20.1
1941	256,645	4,236	227,150	20.2
1942	288,985	5,010	242,264	21.7
1943	320,134	5,367	247,791	22.2
1944	357,501	7,095	247,276	22.0
1945	368,347	27,002	244,894	21.6
1946	338,813	10,066	267,102	21.8
1947	378,600	8,698	276,326	22.0
1948	352,699	12,703	266,437	20.8
1949	307,073	8,370	258,171	19.3
1950	293,727	4,800	270,014	19.7
1951	291,234	6,630	279,663	20.0
1952	342,527	5,310	320,671	22.2
1953	355,184	5,670	339,575	22.9
1954	385,819	5,250	365,058	23.9
1955	386,011	10,530	377,308	24.0
1956	404,311	6,240	390,733	24.3
1957	446,476	7,620	421,098	25.4
1958	449,819	13,200	422,201	24.8
1959	460,004	7,890	418,925	24.0
1960	451,050	6,030	426,800	24.0
1961	446,533	6,030	429,195	23.5

SOURCE:—Canada, *Handbook of Agricultural Statistics, Part IV, Food Consumption in Canada 1926–55*, Queen's Printer Ottawa, 1958, p. 12; 1951–60, Canada, D.B.S. *Production of Poultry and Eggs, 1958 and 1959.*

Egg Support and Poultry Meat Specialization, 1950-1957.—As a new contract was not negotiated between the British Ministry of Food and the Canadian government, the Special Products Board was forced to withdraw as an active buyer and announced on December 14, 1949, that it would cease to purchase eggs for delivery to the United Kingdom as of December 17, 1949. Prices then fell rapidly. In Western Ontario prices to producers for Grade "A" Large declined from 42 cents a dozen in November 1949 to 24 cents in January 1950. The low prices encouraged increased purchases by domestic consumers and export restrictions which had been placed on eggs shipped to countries other than the U.K. were removed as soon as the Special Products Board completed its purchases on December 17, thus enabling foreign buyers from other countries to take advantage of Canadian prices.

The Federal government recognized the need for a support program for eggs which would fill the gap left when the U.K. egg contracts were terminated. Throughout the previous four years these egg contracts had assured poultrymen of a floor price for eggs, and without this floor the market would be left to seek its own equilibrium level which the trade felt would sharpen the already narrow cost-price relationship.

On January 25 the Government announced its new policy. *Order in Council P.C. 367,* gave the Agricultural Prices Support Board the authority to purchase eggs out of storage. Only Grade "A" Large and "A" Medium eggs stored under certain specifications were eligible for support. The Board was authorized to accept the delivery of shell eggs in storage in 1950 only if the trade was unable to market them elsewhere. While in storage the eggs were to remain the property of the storer who could withdraw them at any time for sale. The Board was also authorized to purchase eggs stored under the Board's specifications at the support level, 38 cents a dozen for Grade "A" Large and 36 cents a dozen for Grade "A" Medium, plus any necessary allowance to compensate for the costs of oiling, storage, interest and insurance. During the calendar year 396,740 cases of eggs were oiled and stored under the specifications of the Board (Table 3). The Board did not purchase any eggs in 1950.

The price support program was extended into 1951 without any changes. Because of shortages, prices remained very high throughout the year. Production reached a postwar low point of 291.2 million dozen and imports attained a postwar high point of 4.7 million dozen, stimulated by high prices and a steadily rising consumer demand for eggs. Storage by the Board dropped by over one-half from 1950, although 691 cases of eggs were actually purchased. The production and demand for poultry meat, along with imports, increased in 1951 while exports declined considerably.

In 1952, the production of eggs and poultry meat showed respective increases of 17.6 per cent and 14.7 per cent compared with 1951. Prices were generally lower and exports of eggs, chicken, and fowl increased considerably. The Support Board received 351.8 thousand cases of "A" Large eggs in storage, and of this amount it purchased 44,866 cases at prices varying from 42 to 43 cents a dozen (Table 3).

During 1953 egg marketings were about 10 per cent lower than in 1952 throughout the flush period but were enough higher throughout the summer and fall to cause annual output to be very much the same as in the previous year. The decline in marketing led to higher average returns of about eight cents a dozen compared with 1952. In fact, cash income from the sale of eggs amounted to $136.3 million. No eggs were purchased by the Support Board during the year.

Table 2.—Imports of Eggs and Poultry into the United Kingdom from Canada, 1945-1949

	1945	1946	1947	1948	1949
Shell eggs (000 doz.)	38,929	38,473	55,449	45,885	25,415
Percentage of total imports	56.4	47.4	48.0	29.6	12.1
Liquid of frozen egg[a] (000 lbs.)	—	—	3,060	12,117	254
Percentage of total imports	—	—	10.2	18.1	.4
Dried egg[b] (000 lbs.)	23,359	12,307	12,371	10,405	4,064
Percentage of total imports	28.6	12.0	16.3	78.0	37.1
Dressed poultry (000 lbs.)	1	1,153	12,035	1	—
Percentage of total imports	—	3.2	17.6	—	—

[a] Includes whole yolk and white.
[b] Whole and yolk, excludes dried albumen.

Source:—*The Annual Statement of the Trade of the United Kingdom.*

Table 3.—Eggs: Canadian Price Support as Administered by the Agricultural Prices Support Board, 1950-1959

Calendar year	Support price of A Large[a]	Shell eggs oiled and stored under specifications of the Board[b]	Eggs purchased by the Board	Prices paid by the Board for Grade A Large eggs oiled and packed to Board specifications[c]	
	cents a — dozen —	— cases —	— cases —	— cents a dozen —	
1950	38.0	396,740	none		
1951	38.0	152,289	691		
1952	38.0	351,766	44,866	Up to Oct. 1	42.0
				Oct. 2—Nov. 1	42.5
				Nov. 2—Dec. 1	43.0
1953	38.0	185,968	none	(as above)	
1954	38.0	215,671	57,701	Aug. 11	42.0
1955	38.0	201,772	107,000	Oct. 4	38.0
1956	38.0	29,442	7,390	Allowances for oiling	1.0
				Storage before May 1	2.5
				" during May	1.0
1957	38.0	59,094	618,743	" " June	0.5
				" " July 1—Oct. 1	0.5
1958	38.0 44.0[d]	Board changed to outright purchase	352,631	Jan. 27 (oiling 1¢) May 5	38.0 44.0
1959	44.0		717,445		

[a] Appropriate differentials made for other grades, i.e. 'A' Medium—36 cents a dozen.

[b] Eggs remained property of storer and could be withdrawn at any time for sale other than to the Board. 1950–52, A Large and A Medium only; 1953 A Extra Large incl.; 1956 A Large only; January 1957, A Extra Large; April 1957, B; November 1957, B concl.

[c] Board could offer to buy eggs stored under specifications at the support level plus an allowance to compensate for the costs of oiling, storage, interest and insurance. If storer declined offer by Board to purchase his eggs, these eggs no longer eligible for purchase).

[d] Represents offer to purchase A Large eggs packed in wooden cases delivered at Montreal. Regional supports are listed below for 1958 and 1959.

1958 Support	
Toronto and Quebec City	43.0
Vancouver	42.0
Western Ontario	42.0
Manitoba	41.0
Alberta and Saskatchewan	40.0
Maritimes	42.0

1959 Support	
Quebec City	43.0
Toronto	42.5
Vancouver	42.0
Manitoba	41.0
Alberta and Saskatchewan	40.0
Ontario and Maritimes	42.0

The production of all classes of poultry except goose meat declined in 1953. Prices followed the long-term seasonal pattern, declining in the fall when marketings increased. The lower turkey output stimulated United States turkey imports which rose to 5.4 million pounds, nearly one-half consisting of eviscerated birds. The wide consumer acceptance of these ready-to-cook birds indicated the new trends that were developing and emphasized the need for similar marketing techniques in Canada.

Egg production increased in 1954. Receipts at registered grading stations during the year were exceeded only by receipts in 1947 and 1948 while total production established a record, 385.8 million dozen, exceeding the previous high level reached in 1947 by over seven million dozen. A noticeable shift in storage operations occurred; "into-storage" movements were more pronounced in March, instead of April as in previous years, while "out-of-storage" movements were retarded by heavy marketings in the summer. Prices were lower, 34 cents a dozen, weighted average price all grades, as compared with 44 cents a dozen w.a.p. all grades in 1953. Domestic consumption increased one dozen per capita from 1952 while exports remained virtually unchanged in relation to exports in 1953. The Board purchased 57,701 cases of "A" Large eggs at 42 cents a dozen, beginning August 11.

The most significant development in the production of poultry in 1954 was the expansion of the turkey and broiler industries. Despite cost-price relationships less favorable than in 1953, broiler marketings increased by 66 per cent. The expansion of the turkey industry (48.4 per cent compared with 1953) revealed the increasing importance of the eviscerated ready-to-cook forms. In 1953 only 9.7 per cent of the total turkeys marketed were sold in this way; in 1954 this figure had grown to over 20 per cent.

The production pattern changed very little in 1954, there being a decrease in the receipts at registered grading stations while total production increased by only 64 hundred cases (192,000 dozen). There were 201,772 cases of eggs stored with the Board, over half of which were purchased by the Board at 38 cents a dozen. Poultry meat production increased over 1954. Receipts of broilers at registered processing stations averaged 1.2 million pounds a week compared with 900,000 pounds in 1954 and 500,000 pounds in 1953. Imports of turkey from the U.S. in 1955 reached a record level of 10.6 million pounds, eviscerated weight, representing over 15.5 per cent of the total Canadian production.

Production of both eggs and poultry continued to rise in 1956. Storage stocks of eggs at the seasonal high point, June 1, totaled only 112,000 cases, the smallest number since 1950. The seasonal trend of marketings has gradually been leveling off since 1947; however, despite this trend, the marketings in the fourth quarter of 1956 were the highest of the year, contrary to what had happened since the war. A strong demand kept prices higher than in 1955 throughout most of the year. In November, heavier marketings of small eggs pushed prices to record low levels for the month.

Specialized poultry meat production expanded again in 1956. From late April broiler marketings generally exceeded two million pounds a week. Prices fell from 26 to 18 cents a pound in southern Ontario where the most dramatic expansion was taking place. The shift toward ready-to-cook turkeys continued in 1956 along with a marked increase in output. The increased eviscerating capacity of the Canadian industry is illustrated by the fact that 72 per cent of the turkeys marketed in 1956 were packaged in the ready-to-cook form compared with 48 per cent in 1955. The effects of the expansion in the domestic production of broilers and turkeys, coupled with record imports of chicken and fowl (8.2 million pounds) and turkey (13 million pounds), resulted in the accumulation of large stocks in cold storage. Prices were subsequently at or near record low points during the later part of the year.

The year 1957 was a boom year in the poultry industry. Egg production totaled 446.5 million dozen, 10.4 per cent more than in 1956. A record volume of eggs passed through registered egg grading stations, 6.8 million cases, five per cent more than the previous record volume set ten years earlier in 1947. However, the previous record was set when half of the total eggs were exported under contract to the U.K. whereas in 1957 less than one-half per cent were exported, the rest being consumed in Canada. The per capita consumption of eggs reached an all-time record of 25.4 dozen in 1957, surpassing the previous record set in 1931 by half a dozen per person. Heavy egg production, especially throughout the early part of the year resulted in a large volume of eggs in storage—417 thousand cases at July 1. Considerable pressure was therefore brought to bear on prices which remained at support levels until about mid-year. A total of 618,743 cases of "A" Large including "A" Extra Large, and from April to November Grade "B" eggs, were purchased by the Board at support prices, including allowances for oiling and storage. (Table 3)

Poultry Support and Import Controls.—On July 17, 1957 the Federal government announced its intention to support the price of fowl and turkey in Canada and at the same time established import controls on these two categories of poultry. Pressure was brought to bear on the government by the poultry industry which was experiencing another year of increasing production and abundant domestic supplies. Imports were increasing at a considerable rate. In 1956, for example, imports of turkey meat amounted to over 13 million pounds. By the end of July 1957, the United States alone had exported over six and one-half million pounds of turkey, with every expectation that by the end of the year this figure would have tripled, since the largest volume of imports generally arrived in the second half of the year. Over-supply and falling prices made protection necessary. The Agricultural Prices Support Board was authorized to support turkeys at 25 cents a pound live weight, delivered Toronto and Montreal, for birds 10 to 20 pounds, and fowl at prices equivalent to 23 cents a pound live weight, Toronto, for No. 1 birds, five pounds and over, marketed between July 17 and March 31, 1958. Appropriate prices for other weights and markets were also provided. No turkeys were delivered to the Board as prices remained above the support level. However, the Board purchased 8.95 million pounds of fowl up to March 31, 1958. The support program for fowl was not continued after this date and import controls on fowl were dropped a week later.

Agricultural Stabilization and Deficiency Payments for Eggs.—In 1958 the *Agricultural Stabilization Act* was passed, replacing the *Agricultural Prices Support Act* of 1944 as the principal statute dealing with the prices of agricultural commodities. The primary objective of the new Act, which established the Agricultural Stabilization Board, was to stabilize prices in such a way as to maintain an equitable distribution of income among producers.

In addition to the Stabilization Board the Act established:

(1) an Advisory Committee of farmers and representatives of farm organizations;

(2) (a) a guaranteed price system for nine "named" commodities, wheat, oats and barley grown outside the Canadian Wheat Board area; cattle, hogs, sheep, butter, cheese and *eggs*. The guaranteed price = *prescribed* price of 80 per cent of base price. Base price = ten-year average price before the support year for commodities at selected centers deemed representative of the market;

(3) appropriate prescribed prices for commodities "designated" by the Board.

To carry out the above provisions the Board was authorized to purchase a commodity outright at the prescribed price, pay a deficiency payment to producers so as to fill the gap between actual returns and the support price or carry out any other method of payment or subsidization approved by the government.

The price support for eggs up to March 31, 1958 remained unchanged. The Board continued its offer to purchase eggs at 38 cents a dozen for Grade "A" Large with appropriate differentials for other grades. On January 1, 1958 the program became one of outright purchase by the Board, so that no allowances for storage costs were made. Most of the 251 thousand cases purchased by the Board during this period were sold on the export market.

As a result of the new legislation, a new egg support program was introduced on May 5, 1958. The new support level for Grade "A" Large eggs, packed to the Board's specifications and delivered to approved storage centres, was set at 44 cents a dozen at Montreal. Appropriate differentials were established at the other important regional centers. (Table 3)

The production of turkey and broiler meat reached new peaks in 1958. Turkey receipts at registered stations in December were exceeded for the first time by receipts in October and November, revealing the shifting seasonal pattern to earlier marketings. Import restrictions on turkeys continued throughout the year, but permits were granted for shipments of certain forms of turkey not readily available in Canada. Slightly more than half a million pounds were imported during the year.

In May 1959 the Federal government announced that the price support level for eggs would continue on a basis similar to that of the previous 12 months. However, the Minister of Agriculture pointed out that the problem of disposing of surplus eggs was becoming more and more difficult and he indicated that a deficiency payment scheme was necessary to alleviate the situation. To this end the Agricultural Stabilization Board had been directed to develop a method of providing price support for shell eggs by making payments to make up the difference, if any, between the average market price to producers and the prescribed support level. This program would also provide a basis for restricting payments to a specific volume of eggs delivered by any one producer in a given period.

On August 26, 1959, details of the new program were released by the Agricultural Stabilization Board. The new policy came into effect on October 1, 1959 and set out the following:

1. As of October 1, the Board withdrew completely from its former program of offering to purchase shell eggs on the basis of 44 cents a dozen for Grade "A" Large eggs graded and packed, in store at Montreal. Since that date all eggs marketed in Canada were bought and sold on a free-market basis.

2. The Board's liability for deficiency payments was to be and has been calculated on a 12-month basis, although provision was made for an interim payment covering the last three months of 1959, to be made on eggs marketed in that period.

3. The actual level at which eggs were supported remained the same under the new "deficiency payment" scheme as under the older purchase program. On the basis of an analysis of prices in recent years, it has been established that the 44-cent Montreal price was about equivalent to a 33-cent annual national weighted average producer price for Grade "A" Large eggs. This 33-cent national producer price was the basis of support under the new program. Under the payment system proposed, if the national weighted average producer price for Grade "A" Large eggs in the 12-month period should average 33 cents a dozen or more, no payment was to be made to registered producers. However, if this price should average 30 cents, for example, a payment of three cents a dozen was to be made by the Board.

4. Any payments as calculated above were to be made only on Grade "A" Large and Grade "A" Extra Large eggs. Payments were made only on eggs marketed through grading stations registered under the Canada Agricultural

Products Standards Act, or on eggs marketed by producers who were registered as producer-graders and fulfilled the requirements of the Canada Department of Agriculture in this respect.

5. If the calculation of the 12-month national weighted average price indicated that a payment was called for, the same payment per dozen was to be made to all eligible producers, regardless of the price at which any producer, in any province, at any time of the year, might have sold his eggs. This feature of the program ensured that it would remain in each producer's interest to seek to obtain the highest possible market price for his eggs at the time of sale.

6. If a "deficiency payment" was made, it was so made only on the first 4,000 dozen Grade "A" Large and Grade "A" Extra Large eggs marketed by any one farm unit during the 12-month period. On the basis of recent average rates of lay, and on average proportion of eggs falling in the "A" Large and Extra Large categories, it was expected that this 4,000-dozen limit would represent a year's production of a flock of about 400 to 500 layers.

7. The volume of eggs on which any producer was entitled to obtain "deficiency payments" was to be determined by records provided by the registered grading stations of receipts of Grade "A" Large and Extra Large eggs from each registered producer. Applications for producer registration were available at all grading stations. An official registration number was required before a producer would receive payment.

During the first nine months of 1959 a total of 717.4 thousand cases of surplus eggs were bought by the Board, most of which were exported to Venezuela in the form of shell eggs and to Western Europe in the dried and frozen forms. Egg prices were at support levels throughout most of the remaining months of the purchase program. With the introduction of the deficiency payment scheme, eggs were free to find their own price level in the open market and in early December, as a result of seasonal production increases, prices fell sharply; the weighted average price for all grades in December was 22 cents a dozen, nine cents lower than in December 1958, and 12 cents lower than the five-year 1953-1957 December average price.

Broiler and turkey meat production in 1959 once again exceeded that of any previous year. The new record figures were 365.2 million pounds

Table 4.—Registrants to Receive Deficiency Payments

Size of laying flock	Number of registrants	Percent of each category	Percent of registrants, cumulative
000–499	79,449	88.7	88.7
500–599	2,595	2.9	91.6
600–699	1,336	1.5	93.1
700–799	834	.9	94.0
800–899	780	.9	94.9
900–999	428	.5	95.4
1,000–9,999	4,043	4.5	99.9
10,000 and over	80	.1	100.0
Total	**89,545**	**100.0**	

of broilers and 130.6 million pounds of turkeys (eviscerated weights). The consumption of fowl and chicken amounted to 22 pounds per person and the turkey consumption established a world record of 7.9 pounds per person.

During the first six or seven weeks of the last quarter of 1959 supplies of Grade "A" Large eggs were seasonally short and producer prices averaged well above the 33 cent support level. By December the national average "A" Large price was much lower. However, for the quarter as a whole the national average producer price was very slightly below the 33-cent level. Accordingly, no deficiency payment was considered necessary.

Prices remained depressed in the early part of 1960, because of a large volume of egg marketings. To relieve the situation and to aid in the adjustment to the new system of support, the Board was authorized to make an interim payment to producers for eggs marketed during the first quarter of 1960.

The national weighted average price paid to producers for Grade "A" Large eggs during the period January 1 to March 31 was 25.4 cents a dozen; this was 7.6 cents below the support price of 33 cents a dozen and, therefore, the Board set the amount of the interim payment at eight cents a dozen. This payment was made for all Grade "A" Large and Extra Large eggs, up to a total of 1,000 dozen (since it was for one-quarter only) marketed in the period from January 1 to March 31, 1960.

The national weighted average price to producers for the deficiency payment year which ended September 30, 1960 was 30.6 cents a dozen, 2.4 cents below the prescribed level of 33 cents. The Agricultural Stabilization Board accordingly paid to each registered producer 2.4 cents a dozen on his deliveries of Grade "A" Large and Grade "A" Extra Large eggs to registered grading stations during the year ending September 30, 1960. No producer was to be paid on deliveries in excess of 4,000 dozen, and any interim payment made to a producer on account of sales made during the January to March quarter, was to be deducted from the total due to him.

We are presently in the midst of a new egg year. However, two changes have been made for the October 1961 to September 30, 1962 period. The government support level has been raised from 33 cents to 34 cents a dozen. In addition, marketings of Grade A Medium eggs are now eligible for support along with the Grade A Large and Grade A Extra Large eggs.

During the first half of the 1961-62 egg program the cumulative weighted average price for Grade A Large eggs was 34.5 cents a dozen, 0.5 cents a dozen higher than the support level of 34 cents.

The cost of the egg deficiency payment program amounted to $2,082,673 up to the end of March, 1961. No alteration in the method of computing the support or deficiency payment levels has been made. However, in 1962 certain administrative changes were made. The payment schemes were placed on a claim basis. This required that hog and egg producers retain their grading certificates in order to file a legitimate claim at the end of the year if a payment was to be made by the government. The producer was also required to submit his registration number along with his grading certificates when making his claim for payment. The programs have not brought about any major re-allocation of production locations as far as can be analyzed from secondary production data. Any changes that have occurred in regional production are due to market forces uninfluenced by the deficiency payment programs.

RELOCATION ADJUSTMENTS OF 95 NEW BRUNSWICK FARM FAMILIES, 1956-60

D. DYCK

In 1956 the Rural Sociology Unit of the Economics Division conducted a study of the relocation adjustments made by 104 farm families whose property was expropriated to make room for the army training area built near Gagetown in southwestern New Brunswick. These families had, at that time, resided in new areas for only one to three years.[1]

Most of the people interviewed in 1956 said that they had not had time to complete the necessary adjustments on their new farms. Consequently it was decided to visit them again in October 1960 to find what adjustments they had made during the previous four years. Usable information was then obtained from 95 families.

Factors Influencing People to Resettle on Farms.—These families had farmed in the army training area and resettled on new farms after leaving their expropriated holdings. An attempt was made to determine which factors had induced them to remain in farming, either full-time or in combination with nonfarm work. The reasons which they gave for resettling on farms may be summarized as follows:

1. Generally favored a farm as a place to live, or farming as an occupation. This was expressed in terms such as "I lived on a farm all my life", "I enjoy farming", and "a farm is a good place to live". One operator said that his sons' preference for farming had induced him to relocate on a farm. (Comments by 53 respondents).

2. Economic factors. Reference was made to the farm as "a cheap place to live", and to the fact that farmers could produce much of their own food on a farm. Some operators had been unable to sell all their stock and equipment at the time of the move and this had induced them to resettle on a farm. There were few nonfarm employment opportunities in New Brunswick at the time, and some displaced farmers had not had enough funds to shift into nonfarm work or business. Two operators had considered farming as a source of income supplementary to their nonfarm income, and one had been induced to buy a farm with credit available under the Veterans' Land Act. (Comments by 35 respondents).

3. Lack of training for nonfarm work. Twelve respondents merely said that, in their opinion, they lacked education, training or experience for other work. Fifteen operators, however, also mentioned that they had always lived on the farm, they enjoyed farming, they were too old to change occupation, or that there was some economic deterrent to moving out of agriculture (economic factors such as mentioned in (2) above). (Comments by 27 respondents).

4. Poor health or old age. Seven operators, averaging 69 years in age in 1960, thought they had been too old to change occupation at the time of moving from the training area and three others were in poor health. (Comments by 10 respondents).

Thus the preference for farming as an occupation or for the farm as a place to live was one of the major reasons why the respondents had resettled on farms. Sixty-two operators had not considered nonfarm work as an occupation at the time of moving. Thirteen had considered or looked for work other than farming; some of these had contemplated purchasing a small farm and doing nonfarm work but were discouraged from doing this when they found that many of the smaller farms available for purchase cost as much as larger holdings,[1] and others had not been able to find suitable nonfarm work. The other 20 operators had retained the nonfarm job which they held before moving, or had obtained such employment soon thereafter; only one of the 20 had discontinued doing nonfarm work by 1960, to farm full time. Generally, the information obtained from the operators indicates that their families had not objected to resettling on a farm, but members of 27 families had been in favor of doing nonfarm work either in combination with farming or as the only source of cash income.

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[1] See *"Relocation Adjustments of Farm Families,"* by D. Dyck and F. Lawrence in *The Economic Annalist*, February 1960, pp. 4-12.

Opinions on Relocating.—Since the respondents had felt compelled to get established on new farms without delay after the expropriation,[2] an attempt was made in the 1960 survey to determine whether they would go about it in the same way again in view of their experiences up to that time. Of the 83 people who gave their opinions in this regard, 33 said that they would go about it in the same way. According to the 1956 survey data, 19 of these had settled on commercial farms, six on part-time farms and eight on small-scale farms.

Most of the opinions on relocating expressed by the other 50 respondents referred to factors to be considered in the purchase of farms. Twenty-one respondents said that they would take more time in their search for a suitable holding so as "to get a better place", or "to adjust to new farming conditions". Seven of the people interviewed (six of these were on commercial farms in 1956) said they would buy a smaller holding; most of them did not give their reason for this opinion but one referred to old age and another one thought it would have been more profitable to invest some of the money in other businesses. Four respondents spoke of the location of a farm available for purchase as a factor to which they would give more consideration. General community conditions, availability of nonfarm job opportunities for their children and marketing facilities were mentioned as important factors. Two operators said that they would look for a farm with more pulpwood, one would settle on a dairy farm near a large population center, and one would pay more attention to the condition of the buildings before buying. (Comments by 36 respondents).

Fourteen respondents said that they would secure nonfarm work if they were again faced with the problem of relocating; only three of these were on non-commercial farms at the time of the 1956 interview.

Suggestions for Minimizing Problems in Relocating.—This study of relocation adjustments was conducted to gain some understanding of the social and economic impact of displacement on rural people and the problems involved in relocation. Accordingly, the respondents were asked for their opinion of how people could be assisted when faced with the problem of resettling; these opinions were asked for in both the 1956[3] and 1960 surveys. Of the 95 respondents from whom information was obtained in 1960, seven said that they were satisfied with the way the expropriation had been conducted and three others did not give any opinion. The suggestions offered may be summarized as follows:

1. Suggestions relating to compensation payments. Most of the suggestions relating to payments received for expropriated property were to the effect that people should be allowed sufficient money for relocating. Specific reference was made to moving expenses and the expense of searching for a new farm. Other respondents suggested that people would be more satisfied with their payments if adequate consideration were given to the condition of farm land;

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[1] Dyck, D., and F. Lawrence, *"Relocation Adjustments of Farm Families", The Economic Annalist*, February 1960, page 9.

[2] Ibid., page 9.

[3] Ibid., page 11.

i.e. woodland as compared with cropland, relatively poor farms as compared with the better farms, etc. (Comments by 37 respondents)

2. Ample time should be allowed for people to move, or people should not be in a hurry to move. Some respondents suggested that delay in moving people could help to avoid inflation of farm prices in the surrounding area, and in the meantime the people involved could be given jobs at preparing the camp site. It was also suggested that the time of year should be taken into consideration; people should be moved during a time when moving would be of least interference with farm work. (Comments by 18 respondents)

3. Suggestions relating to relocation. (*a*) Information and other assistance should be made available to people in finding a new farm and in relocating and obtaining a job. (Comments by 17 respondents)

(*b*) Precautionary measures should be taken to help avoid inflated farm prices. Some respondents thought that the government should buy the farms that farmers desired to purchase; others opined that the expropriation should not be made public knowledge; and some merely stated that inflationary prices were a major factor in the problem of relocating and gave no opinion on how this could be avoided. (Comments by 13 respondents)

(*c*) People should take more time to search for and select a new farm. This would help avoid inflated farm prices and, in addition, give people time to make an adequate appraisal of farms available for sale. (Comments by 10 respondents)

(*d*) Four respondents made suggestions as to the occupations that people should go into when moving from an expropriated area. One thought the young people should be advised to stay in farming, one suggested that people should purchase a small farm and obtain an off-farm job, one said that people generally should move into nonfarm work, and one suggested that the older people should obtain nonfarm work.

(*e*) Two respondents made reference to the distance that people moved from the expropriated area; one was of the opinion that this was of no importance, whereas the other thought that inflation of farm prices could be avoided by moving farther away.

(*f*) Two other respondents thought that older people should be given relatively more consideration in the process of relocating because these people would generally be affected more seriously.

(*g*) Two respondents said that people should be allowed to find their own way; it was best to leave people alone.

4. Seven other respondents gave various other opinions: "A less populated area should be chosen for a camp site", "Farm products for the camp should be purchased in the local area", "Farmers should refuse to move", "People should move to the U.S.A.", "People should try to forget about it all", and "Let the people in charge do the talking, they know more about it than we do".

Thus, in view of their experiences in relocating, 36 of the respondents (38 per cent) said that they would exercise greater care in the selection and purchase of farms for sale (having regard to the size, location, condition and type of farm), if they were confronted again with the problem of resettling, 14 other respondents (15 per cent) said that they would obtain nonfarm work. These two aspects are re-stated in two suggestions given by the respondents for minimizing problems in relocating. These suggestions were: (1) "People should take more time in searching for and selecting new farms", so as to more accurately appraise the farms available for purchase and to avoid inflation of farm prices (ten respondents); and (2) "People should not go farming again", they should "relocate in the proximity of jobs, obtain accurate information on jobs available and receive (other) assistance in obtaining a job". (four respondents) These two suggestions were not offered in 1956, and hence reflect a change in view by the respondents.

The Survey Farms.—The 1956 report was concerned with the relocation adjustments of 104 families who farmed both before and after their move from the Gagetown army training area.[1] For this purpose a farm was defined, as in the 1951 Census as "a holding on which agricultural operations are carried on. The holding may consist of a single tract of land or of a number of separate tracts held under different tenures. It may be (*a*) three acres or more in size, or (*b*) from one to three acres in size with agricultural production in the previous year valued at $250 or more".[2] The holdings of the 95 respondents in the 1960 study were also classified according to this definition, and it was found that ten of them no longer operated farms. Thus, a total of 85 farm operators were interviewed in 1960.

Economic Classification of Farms.—The farms visited in the 1960 survey are grouped here according to the economic classification of farms defined in the 1951 Census (Table 1). "This classification takes into account (1) the total value of farm products sold; (2) the number of days the operator worked off the farm at either farm or nonfarm work; and (3) the relationship of the value of farm products sold to income received by the operator from all sources".[3] According to this classification, 24 per cent of the respondents operated small-scale farms in 1960 compared with 15 per cent in 1956; and 26 per cent of the farmers sold farm products valued at $3,750 or more in 1960 as compared with 17 per cent in 1956. There was thus (1) a movement out of agriculture during 1956-1960 since ten respondents ceased to farm and the proportion of small-scale farmers increased from 15 to 24 per cent, and (2) an increase (from 17 to 26 per cent) in the proportion of larger farms with sales of farm products valued at $3,750 or more. The number of commercial farmers with value of farm products sold of $250 to $3,749 had decreased by 16 during the 1956 to 1960 period. This change involved a total of 26 farmers; 13 increased their farm product sales, nine decreased it, and four merely reported a change in the proportion of their income received from nonfarm sources—these operators sold from $250 to $1,199 worth of farm products in 1960 as well as in 1956.

Table 1.—Economic Classification of Farms, New Brunswick Relocation Study, 1956 and 1960

Economic classification	Respondents not farming in 1960, by 1956 farm status	Farms studied			
		1956		1960	
		Number	Per cent	Number	Per cent
	— number —				
Small-scale	2	13	15	20	24
Part-time	3	13	15	14	16
Commercial farms with value of farm products sold of:					
$ 250—$1,199	2	13	15	12	14
$1,200—$2,499	1	21	25	12	14
$2,500—$3,749	2	11	13	5	6
$3,750 or more	0	14	17	22	26
Total	**10**	**85**	**100**	**85**	**100**

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[1] Ibid., page 4.

[2] *Census of Canada, 1951, Agriculture, Part 1.*

[3] *Census of Canada, 1951, Agriculture, Part 1.*

Of the ten respondents who had ceased to farm by 1960, seven had moved to new locations; five were engaged in nonfarm work, one was temporarily unemployed and one (81 years of age) received an old age pension. Three of the ten respondents continued to reside on their 1956 holdings; one derived income from nonfarm work, one (female) received income from a war service pension and ceased farming operations when her sons left home, and one (female) rented her land to a neighbor and received old age pension.

Land and Livestock.—Generally, the land area in farms operated by the 85 survey respondents had increased on the average, but the acreage classed as improved had decreased from 1956 to 1960 (Table 2). The farms classed as small-scale had increased in number and also in size, indicating that some land was left idle by the operators when they ceased to farm on a commercial scale.

As in 1956, the improved acreage on all classes of farms in 1960 was comprised mainly of hay, pasture and oats plus other grains: only three per cent of the improved area was in other crops (Table 3). The high percentage of the hay and pasture acreage is reflected by the fact that 74 farms had some forage consuming livestock (cattle or sheep). All but one of the commercial farms had cows (Table 4) and 18 of them shipped some fluid milk; these 18 farms had an average of 26 cows per farm in 1960, and 14 of them were shipping fluid milk already in 1956 when they had 24 cows per farm, on the average.

Productive Man-Work Units and Labor Expended.—In addition to the economic classification of farms, total and improved land area, and the number of types of livestock kept by the operators, the size of the farm operations may also be indicated in terms of the labor used on farms. In this analysis, the amount of labor required on the 51 commercial farms was computed in productive man-work units (PMWU), which represent the number of ten-hour days of work a year required per item of crop and livestock on the farm, assuming average rate of labor performance. These farms required 243 PMWU's, on the average, a year; 54 per cent required less than 200 PMWU's, 28 per cent required from 200 to 399, and 18 per cent required 400 or more PMWU's a year.

The labor used on the commercial farms to do the work required during the 12 months preceding the survey was computed in man equivalents (ME). The time spent at farm work was obtained in terms of man-hours, with 3,000 hours considered as one year. Total man equivalents included the work done by the operator, the operator's family, hired labor and any other persons on the farm; the work of children 14 years or older was considered equal to that of a man. Thus the labor force on the majority of the commercial farms (43 or 84 per cent) was found to be one or more man equivalents, averaged 1.7 per farm.

The efficiency in the use of labor on the commercial survey farms may be indicated in terms of the PMWU's per man equivalent. On the average, these farms had 156 PMWU's for every man equivalent; 31 per cent had less than 100, 49 per cent had from 100 to 199, 14 per cent had 200 to 299, and six per cent had 300 or more PMWU's per man equivalent. Considering the number of work days in a year to be 300, these data suggest that many of the commercial farms surveyed are too small to use the more efficient farming techniques available. Thus it is apparent that some of the labor on the survey farms is economically underemployed.

In connection with the labor used on farms, information was obtained also on the type of work done by the operator's wife or homemaker. On 27 of the 58 farms reporting laying hens, the wife of the operator or other female homemaker did the feeding, and gathering and cleaning eggs, and on three

Table 2.—Total and Improved Land Area. Average Acreage per Survey Farms by Economic Class, New Brunswick Relocation Study, 1956 and 1960

Economic class of farm	Number of farms	Total land area	Improved area	Improved in per cent of total area
	—number of acres—			
Small-scale				
1956	13	84	16	19
1960	20	116	33	28
Part-time				
1956	13	143	38	27
1960	14	134	32	24
Commercial				
1956	59	184	80	43
1960	51	198	75	38
All farms				
1956	85	163	64	39
1960	85	168	58	35

Table 3.—Proportion of Improved Land Area in Crops, Pasture and Other Improved Land by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Oats and other grain [a]	Hay	Pasture	Other crops	Other improved land	Total
	—per cent of improved land area—					
Small-scale	3	76	18	3	0	100
Part-time	6	50	38	6	0	100
Commercial	11	50	35	3	1	100
All farms	**10**	**54**	**33**	**3**	[b]	**100**

[a] Other grain averaged less than one acre per farm.

[b] Less than one half of one per cent.

Table 4.—Livestock on farms, Average Nunber per Farm and Number of Farms Reporting, by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Number of farms	Cows	Other cattle	Hogs	Sheep	Hens, pullets and chickens
	—number—					
Small-scale	20	1	1	1	—	7
Farms reporting	—	10	5	8	1	7
Part-time	14	3	2	2	2	19
Farms reporting	—	12	10	4	2	9
Commercial	51	14	8	5	1	49
Farms reporting	—	50	46	31	4	43
All farms	85	9	6	3	1	34
Farms reporting	—	72	61	43	7	59

other farms the female homemaker gathered and cleaned eggs. Cows were reported by 72 farm operators; on 27 farms the work with cows was all done by the men, but on the other 45 farms the female homemaker helped with milking, feeding or cleaning milking equipment. Cleaning the milking equipment was the work done most frequently; 39 respondents said that the female homemaker did this work.

Field work, including hauling wood, haying, and driving a tractor, was done by only ten of the female homemakers. Other outside work included gardening (21 homemakers), feeding hogs, caring for sheep and bringing cows in from pasture for feeding and milking. In 22 of the households the female homemaker did some work on farm accounts; in five she kept the accounts alone and in the other 17 households she kept the accounts with the operator.

Table 5.—Average Prices Paid for Real Estate during 1953-1956, and Average Present Farm Value by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Average price paid, 1953–1956	Average value per farm			
		Land and buildings [a]	Machinery	Livestock	Farm value
	—dollars—				
Small-scale	4,388	5,887	1,455	257	7,599
Part-time	5,925	6,407	2,621	673	9,701
Commercial	9,143	10,165	3,591	3,328	17,084
All farms	**7,494**	**8,539**	**2,929**	**2,168**	**13,636**

[a] 15 operators were unable to estimate the 1960 value of land and buildings; in these cases the price paid when relocating was assumed to be the 1960 value.

Present Farm Value.—The value of land and buildings comprised more than half (63 per cent) of the total farm value for all classes of farms, followed by the value of machinery (21 per cent) and livestock (16 per cent). The average value of the 85 survey farms in 1960 was $13,636; the commercial farms were valued at $17,084, part-time farms at $9,701 and small-scale farms at $7,599 on the average. Land and buildings in the 85 survey farms were valued at $8,539 on the average in 1960 compared with the purchase price of $7,494 at the time of moving from the army training area.

Regarding machinery and equipment, 40 respondents owned a car, 45 had a truck, four owned a grain combine and eight had a bailer. Fifteen of the 85 farm operators (18 per cent) did not own a car or truck in 1960, whereas 17 had no automotive transportation in 1956.

(To be continued)

C.A.E.S. 1962 WORKSHOP

The Canadian Agricultural Economics Society held its 1962 workshop at the Ontario Agricultural College, Guelph, June 11-15, under the chairmanship of Dr. Murray A. MacGregor.

"Problems of the Dairy Industry" was the topic for discussion. The tone of the discussion was aptly given by the following three keynote papers:

(a) *A few Considerations of Relevance in the Formulation of a National Dairy Policy for Canada,* by G. I. Trant.

(b) *Marketing and Pricing of Milk and Milk Products,* by Harry Weijs, Farm Economics and Statistics Branch, Ontario Department of Agriculture, Toronto.

(c) *Changes in Processing and Distribution in the Dairy Industry,* by G. L. White, National Dairy Council, Ottawa.

C.A.E.S. ANNUAL MEETING

The 1962 meeting of the Canadian Agricultural Economics Society was held at the University of Ottawa, June 20-21, in conjunction with the forty-second annual meeting and convention of the Agricultural Institute of Canada.

The theme of the A.I.C. convention was "Canadian Agriculture on the World Scene" and the C.A.S. itself had the same general theme for study at three of its five sessions.

Papers read and discussed were:

1. *The Role of Food in Economic Development,* by Mordecai Ezekiel, FAO, Rome.

Discussants: C.S. Krishna Moorthi,
Embassy of India,
Washington, D.C.
M. W. Menzies,
Canada Department of Agriculture,
Ottawa.

2. *The World Bank and Agricultural Development,* by J. R. Motheral, International Bank for Reconstruction and Development, Washington, D.C.

Discussant: D. L. MacFarlane,
MacDonald College,
Quebec.

3. *Trading Blocs and Canadian Agriculture,* by G. Hallett, University of Manitoba, Winnipeg.

Discussant: D. Kirk,
Canadian Federation of Agriculture,
Ottawa.

4. *North American Agriculture on the World Scene,* by L. A. Wheeler, International Federation of Agricultural Producers.

Discussants: A. P. Gleave,
National Farmers Union,
Saskatoon.
W. J. Anderson,
University of British Columbia,
Vancouver.

5. *FAO and Economic Development,* by Rainer Schickele, FAO, Rome.

Discussant: Frank Shefrin,
Canada Department of Agriculture,
Ottawa.

6. *Canada's Stake in UNESCO,* by J. R. Kidd, Overseas Institute of Canada, Ottawa.

Discussant: A. F. Laidlaw,
Co-operative Union of Canada,
Ottawa.

7. *Some Implications of Research Results from Socio-Economic Studies,* by D. Dyck, Canada Department of Agriculture, Ottawa.

8. *Substitutability versus the Law of the Minimum,* by S. H. Lok, Department of Citizenship and Immigration, Ottawa.

9. *Economic Considerations in Fertilizer Use,* by G. A. Matheson, University of Manitoba, Winnipeg.

10. *Use of Local Residents in Survey Research,* by G. A. Kristjanson, Manitoba Department of Agriculture and Conservation, Winnipeg.

11. *How Valid are Windshield Appraisals,* by G. E. Ackerman, University of Manitoba, Winnipeg.

12. *The Role of the Secondary Enterprise on Ontario Farms,* by J. B. Nelson, Ontario Department of Agriculture, Toronto.

13. *Production Control in Agriculture,* by M. Jaeger, University of Manitoba, Winnipeg.

14. *Weather Index Study,* by M. H. Yeh, University of Manitoba, Winnipeg.

15. *A Pilot Study of the Factors Affecting the Movement of Farm Operators out of Agriculture,* by V. Gilchrist, Canada Department of Agriculture, Ottawa.

At the business meeting of the Society, B. H. Kristjanson, chairman and retiring president, announced the results of the last election and of appointments to the Executive Council for 1962-63. The new officers are:

President: L. W. Hurd, Editor, The Country Guide, Winnipeg.
Vice-presidents: J. W. Clarke and David Kirk.
Councillors: G. A. Lane, J. W. Madill, and R. C. Nicholson.
Editor: G. I. Trant
Treasurer: E. F. Pope
Secretary: I. F. Furniss
Ex-officio member: George E. Brandow, President, American Farm Economic Association.

PUBLICATION OF THE ECONOMICS DIVISION

Canadian Agriculture in 1961. A Chronology of Federal Policies. Compiled by J. M. Sullivan. Ottawa. April 1962. pp. 34.

A chronological record of changes in federal policies affecting agriculture and of the main events related to these policies.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Economic Bulletin for Africa. Secretariat of the Economic Commission for Africa Addis Ababa, Ethiopia, Vol. I, No. 1, January 1961. pp. G+104+XV. Price: $U.S. 0.75.

This first issue of the Economic Bulletin for Africa is organized in three parts. Part A deals with *Current Economic Trends* under the following chapter headings: *World Economic Conditions; Recent Trends in Africa Trade;* and

Notes on Selected Export Commodities of the African Region. Part B has three *Special Articles on Institutional Changes in the Field of Foreign Trade and Payments, Money and Banking; Survey of Development Programmes and policies in Selected African Countries and Territories; and Economic Developments in the Republic of the Congo (Leopoldville), 1957-60. The last part* consists of an 11-table *Statistical Appendix.*

Statistical Yearbook, 1961. Department of Economic and Social Affairs, Statistical Office of the U.N., New York, 1962. pp. 678.

The Thirteenth issue of the U.N. Statistical Yearbook.

Petroleum Exploration. Capital requirements and methods of financing. Department of Economic and Social Affairs. New York. 1962. pp. VI+29.

A report dealing with capital requirements for petroleum exploration and unit costs for the various operations entailed, and methods of securing funds under varying conditions such as different economic systems and policies.

Yearbook of International Trade Statistics, 1960. Department of Economic and Social Affairs, Statistical Office of the U.N., New York. 1962. pp. 603

This eleventh issue of the Yearbook contains detailed data for individual countries and summary tables indicating, among other things, the contribution made by the trade of each country to the trade of that country's region and of the world, providing an analysis of the flow of trade between countries and describing price fluctuations in world trade.

OTHER PUBLICATIONS

Profitability of Farming in the North of England, 1959-60. Results for Selected Groups of Farms. Robson, S., Department of Agricultural Economics University of Durham, King's College, Newcastle upon Tyne. Report 148 FM, September 1961. pp. 33. Price: 5/-

One in a series of annual reports designed to supply local information on income, expenditure and profitability of selected systems of farming.

An Economic Study of Labor Efficiency in Harvesting Tomatoes on Nova Scotia Farms. Grant, Walter V. and Douglas M. Byers. Farm Management Division, Extension Service Branch. Nova Scotia Department of Agriculture and Marketing. Halifax. December 1961. pp. 20.

A study of labor methods and techniques used in harvesting the tomato crop. As part of the over-all study, the researchers did a time and motion study and "attempted" to set standards of performance for various picking and packing methods.

Some Orchard Costs, 1950-59. Folley, R. R. W., Department of Agricultural Economics, Wye College, University of London. February 1962. pp. 39. Price: 4s.

A report on the cost of growing apples and pears on a small group of mixed, but predominantly apple and pear-growing, farms in Kent and Sussex, England, in the 1950-59 ten-year period.

Farm Organization and Incomes in South West England, 1960-61. Department of Economics (Agricultural Economics), University of Exeter, Newton Abbot, Devon, England. Report No. 128, March 1962. pp. 52. Price: 5/.

A report on a farm management survey in the counties of Cornwall, Devon and Dorset. The report describes changes in gross output, costs and incomes for a sample of 249 farms from 1959 to 1960 and for another sample of 144 farms over the 1951-60 period.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

OCTOBER 1962 **Vol. XXXII No. 5**

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Whole-sale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricul-tural Products	Prices of Com-modities and Services used by Farmers		Consumer Price		Indus-trial Produc-tion
		Total	Field	Animal		Com-posite[a]	Equip-ment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	224.8	179.6	270.0	253.2	281.0	226.7	129.2	124.0	173.1
1961										
Jan.	231.7	233.2	189.3	277.1	261.3	273.0	223.5	129.2	124.4	165.8
Feb.	232.1	232.7	189.0	276.3	262.1	....	....	128.9	124.0	166.7
Mar.	231.3	228.4	188.2	268.6	259.8	....	....	129.1	124.0	166.0
April	230.9	225.1	188.5	261.7	255.6	284.7	226.6	129.1	123.9	169.2
May	231.2	225.8	187.3	264.4	254.5	....	....	129.0	123.2	169.4
June	231.4	228.6	192.5	264.7	257.1	....	....	129.0	123.5	173.3
July	234.5	228.3	191.3	265.3	257.4	....	....	129.0	124.9	173.4
Aug.	234.5	216.9	168.5	265.4	244.7	289.0	230.0	129.1	125.3	176.4
Sept.	235.3	219.0	165.7	272.3	247.1	....	....	129.1	123.2	178.1
Oct.	235.3	220.3	165.3	275.3	245.7	....	....	129.2	123.3	177.9
Nov.	235.3	219.6	164.2	275.0	245.9	....	....	129.7	123.6	180.1
Dec.	236.5	220.0	165.8	274.2	247.0	....	....	129.8	124.5	180.5
1962										
Jan.	237.0	218.9	166.7	271.0	247.7	281.8	233.6	129.7	124.8	179.8
Feb.	237.2	219.2	167.5	270.8	246.6	....	....	129.8	125.0	182.5
Mar.	237.1	217.3	167.1	267.5	246.1	....	....	129.7	124.4	184.3
April	237.4	219.2	166.4	272.0	246.5	291.6	235.8	130.3	125.8	184.1
May	239.1	222.8	168.9	276.7	248.3	....	....	130.1	124.5	185.8
June	240.3	228.8	172.0	285.7	252.9	....	....	130.5	125.6	186.6
July	241.3	235.1	174.7	295.5	257.8	....	....	131.0	127.0	....
August	242.5	237.7	171.7	303.7	262.1	....	....	131.4	128.4	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Industrial Expansion.—In an address given at the Industrial Expansion Conference, held in Ottawa on September 7, the Minister of Trade and Commerce said:

> "At the last session of parliament, the government introduced three measures to encourage increased production and improve the quality and design of our products. These measures will be presented to parliament . . . at the session which is about to begin.
>
> The first of these measures reduces the tax rate by 50% on all sales in excess of those made in the previous year. This will make it possible for Canadian producers to venture into new fields which, in the past, have not presented an attractive profit picture. It will help Canadian producers enter new export markets, and also to compete more successfully with imports which are selling in our market.
>
> The second measure makes it financially attractive for Canadian producers to undertake a great deal more research in this country, and thereby improve the quality and design of their products.
>
> The third measure encourages the exploration and development of our oil and gas resources".

Commenting on economic progress in 1962, the Minister added that "Industrial production in the first half" of 1962 "was 9 per cent higher than a year ago. While national account figures for the second quarter are not yet available, preliminary indications are that the Gross National Product for the first half of 1962 was about 8 per cent above the level of the same period of 1961. Labour income has been running 7 per cent above the year ago level, and total personal income has shown a similar increase. Corporate profits have shown a substantial year-to-year gain."

Population.—Canada's population, according to D.B.S. estimates, rose to 18.6 million at July 1, 1962 from 18.3 million at July 1, 1961 and 18.2 million at the June 1 census in 1961. Quebec, Ontario and Alberta had the largest increases since July 1, 1961, but Alberta, Newfoundland and Quebec had the largest percentage increases.

Quarterly changes in population since the census of June 1, 1961 and July 1, 1961 have been as follows:

Province	1961 census, June 1	Estimated population				
		July 1, 1961	Oct. 1, 1961	Jan. 1, 1962	Apr. 1, 1962	July 1, 1962
				—thousands—		
Canada	18,238	18,269	18,357	18,434	18,508	18,600
Newfoundland	458	459	462	465	468	471
Prince Edward Island	105	105	106	106	106	106
Nova Scotia	737	738	739	741	744	746
New Brunswick	598	599	601	603	605	608
Quebec	5,259	5,267	5,300	5,322	5,348	5,376
Ontario	6,236	6,247	6,271	6,298	6,321	6,351
Manitoba	922	923	927	930	932	936
Saskatchewan	925	926	928	927	928	931
Alberta	1,332	1,336	1,345	1,356	1,364	1,374
British Columbia	1,629	1,631	1,639	1,647	1,653	1,662
Yukon	14	15	15	15	15	15
Northwest Territories	23	23	24	24	24	24

Industrial Production.—The seasonally-adjusted index of industrial production rose to 186.6 in June from 185.8 in May, solely because of a 1.1 per cent increase in the manufacturing output; mining, electric power and gas utilities declined by more than one per cent. The January-June index was 9.3 per cent higher in 1962 than in 1961.

External Trade.—Canada's total exports rose by 12.4 per cent to $3,012.7 million in the first half of 1962 from $2,681.2 million in the corresponding semester of 1961. Imports rose by about 13.6 per cent to $3,139.1 million from $2,762.9 million. Total Canadian trade increased by 13 per cent to $6,151.8 million in the first half of 1962 from $5,444.1 million in the first half of 1961; the 1962 January-June total was the largest one ever recorded for the first six months of the year. The import balance rose to $126.3 million in January-June 1962 from $81.7 million in the corresponding semester of 1961.

Total exports to and imports from various countries, in June, and in the first quarter and semester of 1962, compared with totals for the corresponding periods of 1961, were as follows:

	June		April-June		January-June	
	1961	1962	1961	1962	1961	1962
	—million dollars—					
Total exports						
United Kingdom	78.5	76.9	209.7	235.9	430.7	429.4
Other Commonwealth and preferential countries	23.7	27.0	74.9	78.4	164.0	148.4
United States	268.9	313.3	771.8	948.4	1,448.3	1,802.4
All others	136.9	124.8	360.8	354.6	638.2	632.5
Totals	**508.0**	**542.0**	**1,417.2**	**1,617.4**	**2,681.2**	**3,012.7**
Imports[a]						
United Kingdom	58.6	52.9	172.0	152.6	313.7	289.9
Other Commonwealth and preferential countries	23.8	28.8	78.6	87.9	129.9	143.2
United States	332.2	353.4	985.5	1,156.1	1,879.9	2,213.2
All others	80.9	96.1	245.4	272.3	439.4	492.8
Totals	**495.4**	**531.1**	**1,481.4**	**1,668.8**	**2,762.9**	**3,139.1**

[a] Estimates only for 1962.

Most of the principal export commodities gained during the first half of 1962. Newsprint remained the leading domestic export commodity but sales were slightly lower than in the first half of 1961. Wheat shipments rose by 6.9 per cent, mainly because of much larger sales to the United Kingdom and Communist China. Lumber sales rose by 13.2 per cent; shipments to the United States, Australia, and Japan increased but shipments to the United Kingdom declined.

Wholesale Trade.—Sales by Canadian wholesalers rose by 12.8 per cent to $946.2 million in May 1962 from $839.1 million in May 1961. The January-May total rose by 12.7 per cent to $3,989.7 million in 1962 from $3,541.6 million in 1961.

May sales were higher in 1962 than in 1961 for 16 of the 18 specified trades: gains ranged from 1.9 per cent for fresh fruits and vegetables to 27.3 per cent for farm machinery. January-May sales were higher in 1962 than in 1961 for 17 of the 18 specified trades; increases ranged from 2.8 per cent for both farm machinery and hardware to 16.5 per cent for "other" construction materials and supplies, including lumber.

RELOCATION ADJUSTMENTS OF 95 NEW BRUNSWICK FARM FAMILIES, 1956-60—(cont'd)

D. Dyck

Planned Changes in Farm Enterprises.—No changes in the farm organization were planned within the next two or three years by 68 of the 85 farm operators. Twenty-six said they were now fully employed or that they were satisfied with their present organization. Fifteen other farmers said that they did not want to make changes because of their old age or poor health, and eight were employed at nonfarm work in combination with farming. Six operators (including four commercial farmers) said they were considering selling their farms, and seven gave various other reasons for not contemplating any changes. Six other operators were uncertain of their future farming operations.

Seventeen farmers (12 commercial) were contemplating some change in their farm organization within the next few years. In most cases (13, including ten commercial farmers) the change involved the livestock enterprise. Eleven farmers said that they were thinking of increasing their livestock and two of these had already purchased more land or started to build a new barn to bring about this change; one was going to reduce his dairy herd; and one was uncertain as to what changes he would make. Two other commercial farmers wanted to increase their farm land area, and two small-scale farm operators were contemplating new crop enterprises.

Credit Use.—Thirty-three (39 per cent) of the 85 farm operators in the 1960 survey had some debts at the time of interview, and the average amount of indebtedness was $1,576 per operator reporting. Although the number of indebted operators had increased by six, the average debt per farmer reporting had decreased by $861 during 1956-1960. Operators of commercial farms had the most indebtedness ($1,993, Table 6) in 1960; and about three-fifths of this amount was owed on land and buildings. Part-time farmers owed $850 on the average per farm reporting and 72 per cent of this debt was for machinery. Tax arrears (or debts) comprised 27 per cent of the total debts of small-scale farmers.

Table 6.—Number of Farms Reporting Debt, Average Debt per Farm Reporting Debt Items, and Percentage of Debt Incurred for Each Item, by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economics class of farm	Number of farms reporting debt	Average debt per farm reporting	Debt items					Total
			Land and buildings	Machinery including car and truck	Livestock	Other farm items [a]	All other items [b]	
	— dollars —		— per cent of total debt —					
Small-scale........	7	518	14	36	0	27	23	100
Part-time.........	3	850	0	72	0	16	12	100
Commercial.......	23	1,993	61	30	3	4	2	100
All farms.....	33	1,576	54	33	3	6	4	100

[a] Includes fertilizer, feed and taxes. Tax debts comprised 27 per cent of the total debt for small scale farmers, and three per cent for commercial farmers.

[b] Includes household appliances, furniture, funeral home and doctor bills.

Of the 27 farmers who reported some debts in 1956, ten had repayed these debts by 1960. However, 16 operators with no debt in 1956 were indebted in 1960, and three others indicated an intention to obtain some credit for various purposes.

The sources from which respondents obtained credit may be grouped into six categories, and some operators had borrowed from more than one source. Dealers of machinery, feed, fertilizer and local retail stores were the source of the largest number of loans; nine respondents had borrowed from this source. Eight respondents had borrowed from mortgage, finance or insurance companies; seven from private individuals; six loans were obtained from government sources; six from banks or credit unions; and four operators owed money to a doctor or hospital. In addition, six operators were in arrears on their taxes.

Twenty-three of the farm operators interviewed in 1960 (including 13 commercial farmers) had never used credit for any purpose. These people expressed a dislike for debt in terms such as: "It's always a worry to repay a debt", "Paying interest is like throwing money away". Forty-one other operators also expressed a dislike for indebtedness but said that they used credit as a last resort. The other 21 farmers said that they were less reluctant to use their credit, although six of these would restrict loans to those obtained from local stores or for certain purposes in their farming businesses.

Farm and Family Income

In 1960, 77 farmers had some income from the sale of farm products, and 69 had income from various nonfarm sources. On the average, the families obtained 64 per cent of their cash income in 1960 from farm product sales, compared with 65 per cent in 1956. The cash income of families on small-scale farms, from the sale of farm products in 1960, amounted to only about three per cent of their total income; part-time farmers received about 17 per cent and commercial farmers 83 per cent from the sale of farm products. In addition to producing for the market, the farm operators also produced for their own consumption. Valued at prices received by the farmer, income in kind (not including house rent) amounted to $346 per farm on the average; small-scale farmers consumed agricultural products valued at $252, part-time farmers $334 and commercial farmers $386 worth of agricultural products.

Farm Income.—Data on the various sources of farm cash income for part-time and commercial farms are presented in Table 7. Compared with all farmers in New Brunswick in 1960, the survey farmers received a much larger proportion of their income from dairy products and a smaller proportion from crops. Thus the respondents depended mainly on livestock and livestock products for their cash farm income.

Net cash farm income, as calculated in this study, is the gross less expenses for feed, seed, fertilizer, hired labor, gas and oil, land rent, machinery repairs, custom work, livestock (other than livestock bought), taxes, hydro, spraying, dusting, fruit boxes and crates, car and truck expenses, and interest on debts.[1] Part-time farmers had a net loss on farming operations which averaged $37 per farm. Commercial farmers had a net cash income of $1,720 per farm, on the average, and their expenses amounted to 57 per cent of their gross income.

Family Income.—Family income, as defined in this study, includes (1) net cash income from the sale of farm products (as defined previously); (2) income of the operator and his spouse from off-farm sources; (3) income from off-farm sources of single sons and daughters living at home but not paying board and room. Where children pay room and board, only the amount so received is counted as family income; and (4) income of married children, grand-children, parents of the operator and his wife and others living in the household with the operator as their permanent place of residence, unless they pay board and room in which case only the amount so received is included as family income. Major expenses incurred at off-farm work (e.g. trucking) were also deducted.

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[1] Outlays for buildings and livestock bought were not deducted as expenses. Fifty-seven operators had made some building repairs, 41 of these reported an average expenditure of $394; 26 operators (24 on commercial farms) bought livestock for $458 on the average.

The average net cash income of the 85 farm families in the 1960 New Brunswick study was $2,292, $315 more than these families received in 1956.[1] Families on small-scale farms averaged $1,871, part-time farm families averaged $2,357, and families on commercial farms averaged $2,438. Data on the distribution of income among the survey families is presented in Table 8. These data show that 52 per cent of the families received less than $2,000 in 1960, and the proportion of families obtaining less than $1,000 was similar for all classes of farms.

Table 7.—Sources of Farm Cash Income, Number of Farms Reporting Income from Each Sources, and Proportion of Total Income Received from Each Source, 14 Part Time and 51 Commercial Farms, New Brunswick Relocation Study, and all New Brunswick Farms, 1960

Source of farm income	Farms reporting		Percent of total farm income	
	Number	Per cent	Survey farms	All New Brunswick farms, 1960[a]
Dairy products	49	75	67.6	25.1
Cattle and calves	52	80	10.2	11.3
Hogs	28	43	4.5	6.9
Eggs	36	55	4.2	6.0
Other livestock and livestock products	—	—	0.6	5.1
Fruit	6	9	4.0	2.4
Other crops	—	—	1.7	32.1[b]
Forest products	18	28	6.8	11.1
All other	—	—	0.4	0.0
Total	—	—	100.0	100.0
All livestock and livestock products	—	—	87.1	54.4
All crops	—	—	5.7	34.5
Forest products	—	—	6.8	11.1
All other	—	—	0.4	0.0
Total	—	—	**100.0**	**100.0**

[a] Computed from "*Farm Cash Income, 1960*", D.B.S., Ottawa.

[b] Income from potatoes comprised 27.6 per cent of all farm cash income.

Levels of Living.—Level of living scores for the 85 farm families in the 1960 study were computed according to the Edwards scale.[2] The average score was found to be 20, one lower than in 1956; commercial farm families averaged 21, part-time farmers 20, and small-scale farm families averaged 19 (Table 9). Generally the level of living scores reflect the levels of family income in that the families with higher income (those on commercial farms) also had a higher average score. Nine of the items in the scale (including a central heating system, cistern, bathroom, telephone, bookcase, piano or organ, books, newspapers and magazines) were found in less than 80 per cent of the homes; seven items (house construction, storm windows, clothes closet, dining room, dining room furniture, easy chair, living room wall finish) were found in 80 to 89 per cent of the homes; and the remaining 11 items were present in 90 to 100 per cent of the homes. All but one of the 85 farm homes had electricity and 65 had running water.

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[1] The ten families who had ceased to farm averaged $2,134 of income.

[2] Edwards, F. M., "*A scale for Rating Socio-Economic Levels in Rural Western Canada*", Economics Division, Canada Department of Agriculture and the University of Alberta, August 1946.

Table 8.—Net Cash Income Distribution of Farm Families, Per cent of Families By Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Less than $1,000	$1,000—$1,999	$2,000—$2,999	$3,000—$3,999	$4,000—$4,999	$5,000 and over	Total	Average income
	— percent of families —							
Small-scale.....	25	35	10	30	0	0	100	$1,871
Part-time.......	22	22	14	28	14	0	100	$2,357
Commercial....	23	29	18	14	2	14	100	$2,438
All farms...	23	29	15	20	4	8	100	$2,292

Table 9.—Average Level of Living Scores and Percentage Distribution of Families by Low, Medium and High Scores, and by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Average score	Percentage distribution		
		Low (19 or less)	Medium (20-22)	High (23-26)
		— percent of families —		
Small-scale....................................	19.4	40	45	15
Part-time..	19.6	43	36	21
Commercial....................................	21.1	31	30	39
All farms....................................	20.4	35	34	31

The Respondents' House

Comments made by the respondents in 1956 indicated that on many of the relocation farms large expenditures were required for repairs to buildings and other developmental activities.[1] Most of the dwellings were quite old; of the 82 houses for which age information was obtained only eight were less than 30 years old, 21 were from 30 to 59 years old, 21 were 60 to 89 years, and 32 were 90 years old or older. The 1960 respondents were asked to indicate the repairs or type of improvements, if any, which they had made to their house since 1956; 38 had not made any improvements, 19 had made improvements to the outside of the house, 20 had repaired or remodeled the inside, and seven had added improvements to both the outside and the inside. One respondent had built a new house and garage.

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[1] See Dyck, D. and Lawrence, F., *"Relocation Adjustments of Farm Families"*, The Economic Annalist, Vol. XXX, No. 1, February 1960, page 10.

The improvements to the outside of the house consisted mainly of repairing or laying a new roof, painting, repairing or building a new chimney, and building a new sun porch. The inside improvements were also of various types, such as work on walls or floors, installing a new bathroom or bathroom facilities, and building cupboards.

The decision to make improvements to the outside of the house was made by the farm operator alone in 16 of the 26 households where such changes had been made (one of these 16 operators was a lady); in the other cases it had been a joint husband and wife decision. In contrast, the inside-the-house changes (27 households) had been decided on by the wife and operator in 13 households, wife alone in seven, wife and daughter in one operator alone in five (three of these operators had no wives, but one operator had made the decision jointly with his stepmother), and the son had made the decision to make the improvement in one household. Thus the operator was involved in all decisions to make improvements outside of the house, and the wife was involved in 21 of the 27 households in the decision to make some changes inside the house. Joint decisions involving both the operator and his wife were more frequent for inside than for outside improvements.

Fifty-six farm operators had not made all the changes or improvements which they had desired since 1956; 24 desired some changes on the outside of the house, 21 on the inside, and 11 desired some improvements both inside and outside.

Among the outside improvements desired the most frequently mentioned were roof repairing, painting, a new porch and new siding on the house; the most frequently mentioned changes or improvements for the inside were new walls, floor covering, a bathroom, new floors and new cupboards. Most of the 56 operators who desired improvements to their house at the time of the 1960 survey said that changes had not already been made because of lack of money; 50 farmers gave this reason, and nine of these also stated that they did not have time for the work, four said they were not in good health, and one was waiting for an opportunity to sell his property. Four operators gave lack of time as the only reason for not having made the desired house improvement, one expected to have his property purchased for highway construction, and one said the details of the improvement were not yet determined.

Farm and Household Equipment

A total of 46 farmers in the 1960 study hired machinery, hired some custom work done, or made some other arrangement with a neighbor for machinery. Most frequently the machinery thus obtained was for harvesting grain or hay, i.e. for combining, threshing, cutting, mowing, baling, and hauling hay. Some farmers, however, had obtained machinery for plowing, seeding and handling manure, and one had all his work done with other farmers' machinery.

Thirty of the operators indicated the next piece of farm machinery which they would like to purchase; nine said they would like to acquire a tractor, eight wanted to purchase some haying equipment (including one baler and one forage harvester), six would like manure handling equipment, and five desired some seeding or cultivating equipment. One farmer planned to purchase a power saw and another wanted a trailer.

Twenty-four farmers indicated what their next piece of household equipment would likely be. Eight said they would like bathroom facilities, and one of these also wanted to drill a well in the house; three wanted a deep-freeze, and one a deep-freeze or a chesterfield; two a refrigerator; and 11 mentioned various items such as electricity, a chesterfield, stove, sewing machine, living or dining room set, etc. Thus, 13 operators indicated the next items of both farm and home equipment which they would like to buy, but only 10 of these said which one would be purchased first. Seven of these said the farm machinery would have priority because there was more use for it, and three said the household equipment would be the first purchase because there was greater need for this (one wanted to purchase a freezer so as to save money by freezing meat and vegetables).

The decision as to which piece of equipment would be purchased first would be made jointly by the operator and wife (according to the respondents) in seven of the 13 households where the respondent indicated the next items of farm and household equipment which he and his wife would like to buy; in four households the operator alone (one had no wife) would make the decision, one respondent was undecided and another (female) did not give information. Sixteen of the 17 operators who indicated only what their next piece of farm equipment would likely be, said that they themselves would be involved in the decision to buy; in 10 cases the decision would be made by the operator alone, in five cases the operator's wife would be involved and a son would also take part in two of these cases, and in one household the son would make the decision along with the operator. One respondent said that the son alone would make the decision to buy.

Regarding the decision to buy household equipment, the wife would be involved in all of the 11 cases except one; it would be a joint operator-wife decision in nine households, a wife's decision in one household, and the operator alone would make the decision in another household.

Thus in most cases (seven out of 13) the decision as to which piece of equipment (farm or household) will be bought first, would be a joint husband-wife decision, but in four households the operator alone would decide; the decision to buy a piece of farm machinery would be made by the operator alone in 10 of 17 households, by both husband and wife in six households, and in only one of these 17 households would the operator not be involved; and the decision to buy household equipment would involve the wife in 10 of 11 households, but only in one case would the wife alone make the decision.

Sources of Farming Information

The sources from which a farm operator might receive farming information may be grouped into five major categories: (1) discussions with other people; (2) observing other people; (3) listening to the radio or television; (4) attending meetings, agricultural courses, fairs and exhibitions; and (5) reading newspapers, magazines and other publications. In the New Brunswick Relocation study of 1960 it was found that 72 (85 per cent) of the operators interviewed had received information on various farming aspects during 1956-1960 from one or more of the sources listed; this included 96 per cent of the commercial farm operators, 81 per cent of the part-time farmers, and 55 per cent of the small-scale farmers. The number of sources from which the operators had received information is given in Table 10. These data indicate that

Table 10.—Number of Sources from Which Farming Information Was Received During 1956-1960, Number of Operators by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Number of Sources					Total	Number of farms studied
	One	Two	Three	Four	Five		
	— number of operators —						
Small-scale	4	5	1	0	1	11	20
Part-time	1	5	3	3	0	12	14
Commercial	5	16	17	5	6	49	51
All farms	10	26	21	8	7	72	85

10 of the respondents had received some information from one source, 26 from two sources, 21 from three sources, eight from four and seven from five sources. The approximate average for all operators was 3 sources, with the small-scale farmers reporting only 2 sources on the average.

All except one of the farmers having received information from one source only had received it from reading material. Farmers who had received information from two sources had obtained it most frequently (15 out of 26 cases) from publications, and radio and television; operators indicating three sources had received information most frequently (11 out of 21 cases) from printed matter, radio and television, and from discussions with other people; and one-half of those indicating four sources mentioned reading material, radio and television, discussions with other people, and observation of other people (four out of eight cases). Thus the source of meetings, agricultural courses, fairs and exhibitions combined had the lowest frequency of mention; only 16 farmers mentioned this as a source of farming information.

The type of reading material (67 farmers had received information from this source) mentioned most frequently by the respondents were farm papers, followed by magazines, government publications, newspapers and other publications. Radio and television programs were each mentioned with about the same frequency; 14 farmers mentioned the radio, 17 referred to television and 17 mentioned both. Other farmers were the main source of information obtained through the discussion medium, followed by discussions with the district agriculturalist, other Department of Agriculture people and family members living at home; 36 operators had received information through such discussions. Twenty-six other operators referred to their observations of other farmers, field day demonstrations and the experimental or demonstration farms as a source of new farming techniques and practices. And, as already indicated, only 16 farmers mentioned fairs and exhibitions, farmer meetings and agricultural courses.

Seventy of the 72 operators who had received farming information also indicated the type of information that they had received. Most of these respondents (38) stated that the information related to farming in general, but the others (32) specified tillage practices and crop production, livestock, machinery and markets; tillage practices and crop production were mentioned most frequently.

Organization of People on Farms

Table 11 shows the main types of organizations in which the farm operators, interviewed in the 1960 study, held memberships. All the small-scale

Table 11.—Memberships Held in Organizations by Operators and Their Wives, Number by Economic Class of Farm, New Brunswick Relocation Study, 1960

Economic class of farm	Co-operatives	Agricultural society	Marketing facility (shareholder)	Women's Institute	Other farm organizations[a]	All other organizations[b]		Number of families with children in organizations[c]
						Operator	Wife	
	— number of memberships —							
Small-scale	0	1	2	1	0	3	4	0
Part-time	1	2	3	2	0	2	4	4
Commercial	15	12	10	7	10	5	23	4
All farms	16	15	15	10	10	10	31	8

[a] Including Federation of Agriculture, Farm Forum, Credit Union, and Jersey Breeders, Milk Producers, and Artificial Breeders Association.

[b] These included Women's Association, Ladies Aid, Home and School, Canadian Legion, etc.

[c] Twelve children held memberships; three were Brownies, three in Young People's organization, two were Cubs, two in a 4-H club, one in a co-operative, and one in a Women's Auxiliary.

farm operators reporting group participation (7) were members of one organization only, eight part-time farmers held 10 memberships, and 39 of the commercial farmers (76 per cent) held a total of 59 memberships. Sixteen operators were members of a co-operative, 15 were members of the Agricultural Society, and 15 were shareholders in a facility for marketing agricultural products. Ten commercial farmers were members of various other farm organizations and ten held memberships in nonfarm organizations.

Thirty wives were members of one or more organizations. Most of these memberships (31 out of 41) were in organizations such as Ladies' Aid, Women's Association, Home and School, etc., but 10 wives were members of a Women's Institute.

Analysis of the comments made by the respondents suggests that the activities of the Agricultural Society were concerned mainly with co-operative ventures. Hence the respondents' remarks on benefits derived from holding membership in co-operatives, the Agricultural Society, and marketing facilities are grouped in the following summary.

Thirty-eight respondents commented on the success of co-operatives; 30 said that they and their families had benefited through membership in co-operative organizations. They obtained goods (such as fertilizer, seed, feed, machinery, and groceries) at lower prices, the co-op served as an agency for marketing livestock, and there was less variation in prices received for farm products. In some districts provision was made through the co-op for hauling supplies to the farm and farm products to the market. One respondent opined that the livestock auction (a co-operative undertaking) was a good idea, but that generally the organizations had not been of much help. Seven other operators generally shared the opinion that co-ops had not been successful in aiding farmers.

Seven respondents commented on the Women's Institute, and were all favorable to the organization; the Institute helped to maintain the school and assisted in cases of illness. Four respondents said the Institute had assisted the women to get acquainted with people in the area. Others remarked on the work of the organization at county fairs, and in obtaining better television programs for children.

Other comments relating to benefits derived from organizations were: (1) the Milk Producer's Association, "promotes and protects the interests of farmers"; (2) the credit union "lends money at low interest rates"; (3) the Farm Forum "helps in establishing good relationships with your neighbors"; (4) the 4-H club is "a good organization for young people", and "my daughter learned how to make clothes" in a 4-H club.

As previously indicated 54 of the farm operators interviewed belonged to one or more organizations. Of these, 42 (34 on commercial farms) were members of a farm organization (co-operatives, Agricultural Society, marketing facility, and others); their comments on the benefits derived from this membership have been reported. In households where no one belonged to a farm organization (43), the respondent was asked to give the reason for this situation. The most frequent reason given was that farm organizations did not exist in the area; 16 operators gave this reason and their additional comments were that the operator had never been asked to join, he was unable to pay the dues, no transportation was available to attend the functions of the organizations, and the operator was engaged in nonfarm work and did little farming. These comments, individually or in some combination, were also the reasons for not belonging indicated by most of the other 27 operators. Thirteen said they were not interested or not encouraged to join, five were engaged in nonfarm work as their major occupations, three had never been approached to join, two were in semi-retirement, two thought they did not have the time to attend, one felt he did not yet know the people and the organizations in his area well enough to participate, and one did not state a reason.

Summary and Conclusions

The people interviewed in this study operated farms in the Gagetown army training area and resettled on farms after the expropriation. The most frequently mentioned reason for resettling on farms was that farming was favored as an occupation, or the advantages of a farm as a place where to live. Lack of training for nonfarm work, old age of operator, and "the farm as a cheap place to live" were also mentioned; these factors may be considered as associated with the preference for farming as an occupation or for the farm as a residence. Some operators referred to the fact that they had been unable to sell all their livestock and equipment, and some said that the lack of nonfarm employment opportunities had induced them to resettle on farms.

Thirty-eight per cent of the respondents said they would exercise greater care in the selection and purchase of farms for sale if they were again faced with the problem of resettling. Another 15 per cent said they would go into nonfarm work. These two aspects are restated in suggestions for minimizing relocation problems in addition to those mentioned by the respondents in the 1956 survey; "people should take more time in searching and selecting new farms", and "people should not go farming again".

Sixty-three of the farm operators interviewed (74 per cent) commented favorably on their social contacts with people other than those from the army training area; however, 12 of these also expressed some reservation on this matter. Seventeen other operators had only unfavorable comments to make in this regard.

The major changes occurring on the survey farms from 1956 to 1960 may be summarized as follows: (1) ten of the respondents (11 per cent) had ceased to farm and only three of these continued to reside on their 1956 holdings; (2) the proportion of small-scale farmers had increased from 15 to 24 per cent; (3) the proportion of farms with sales of $3,750 or more had increased from 17 to 26 per cent. Generally, the number of commercial farms with value of farm products sold of from $250 to $3,749 had decreased, and the other classes of farms had increased. It may be that part of the movement into nonfarm work resulted from the dislocation of these families from the Gagetown area, but the information obtained during the survey work does not indicate whether this was a relocation adjustment or an adjustment to low income conditions in agriculture generally; (4) the improved acreage per farm had decreased by six acres on the average; (5) the respondents estimated the value of their farm real estate in 1960 to be about $1,000 more per farm on the average than the purchase price in 1953 to 1956; (6) the indebtedness per farmer reporting debt had been reduced by $861 since 1956, but the number of indebted operators had increased by six; (7) only 13 farmers were contemplating a change in their farm organization in the next two or three years and in most cases this change involved an increase in livestock.

SOME ASPECTS OF FARMING ON HAVERHILL LOAM SOILS IN SOUTHWEST SASKATCHEWAN

M. Ragush

The Farmer and His Land, 1960

In 1960, a reconnaissance survey was made of 628 farms for the purpose of collecting information on the type of farm organization, basic pattern of land use, livestock numbers, farm operator characteristics, and degree of off-farm employment. This information was required to stratify all farms according to type of organization and size in order that a sample could be drawn that would adequately represent the main types of farm organization, and size, on medium textured soils of the Brown soil zone of Saskatchewan.

The survey area consisted of 21 townships east of the city of Swift Current. Nine of the 21 townships were in the R.M. of Lawtonia No. 135, nine in the R.M. of Coulee No. 136, and three in the R.M. of Morse No. 165. The soils in the area are predominantly Haverhill Loam. The Haverhill Association consists of medium textured soils developed on undifferentiated boulder clay. Except in the roughest areas, the land is extensively cultivated. The topography is gently to moderately rolling. The soils are moderately productive. The improved land is used mostly for the production of wheat, oats, barley and flax.

Farm Size.—The average size of farm was 5.1 quarter sections per farm. The average number of improved acres was 608 per farm. The small farms (three quarter sections and less) comprised 40 per cent of the total number of farms, the intermediate size range (4 to 6 quarter sections), 40 per cent, and the large farms (7 quarter sections and over) 20 per cent (Table 1).

Tenure.—About half of the farms were fully owned and half were part owned and part rented, or fully rented. There was a significant relationship between size of farm and ownership (Table 1). The proportion of fully owned farms decreased as the size of farm increased. This would indicate that farm unit expansion depended to a large extent on the operator's ability to rent available land.

Table 1.—Distribution of Farms by Size, and Items Studied in the Reconnaissance Survey of 628 Farms on Haverhill Loam Soils, 1960

Items studied	Size by Quarter Sections							
	Under 2	2	3	4	5 and 6	7, 8 and 9	10 and over	All farms
Average improved acres	112	282	405	543	710	930	1,496	608
Number of farms	40	98	116	113	137	81	43	628
Per cent of farms	6	16	18	18	22	13	7	100
	— per cent of farms —							
Tenure								
Fully owned	85	72	59	44	39	30	21	49
Part owned and part rented	12	15	26	36	55	63	30	39
Fully rented	3	13	15	20	6	7	9	12
Cattle								
No cattle	33	47	24	29	16	14	16	26
1—5	25	11	11	7	6	10	12	10
6—20	32	31	36	34	30	17	2	28
21—40	10	10	24	26	28	27	19	22
40 and over	—	1	5	4	20	32	51	14
Hogs								
No hogs	58	61	46	51	45	49	49	50
1—10	30	34	40	35	37	36	28	36
11 and over	12	5	14	14	18	15	23	14
Poultry								
No poultry	50	51	30	40	22	20	33	33
1—99	43	34	37	35	44	51	42	40
100—199	5	6	23	18	25	17	16	18
200 and over	2	9	10	7	9	12	9	9
Off-farm employment	48	20	10	8	7	10	5	13
Age of operator								
Under 40	8	26	32	31	31	37	30	29
40—59	52	45	54	55	55	53	56	53
60 and over	40	29	14	14	14	10	14	18
Residence of operator								
Farm	80	63	77	75	84	83	86	78
Farm and town	2	9	8	12	6	6	—	7
Town	18	28	15	13	10	11	14	15

Livestock.—Twenty-six per cent of the farms had no cattle and 10 per cent raised cattle for home consumption purposes only (1 to 5 head). The remaining 64 per cent had a commercial-size enterprise which ranged from six to 200 head. The average number of cattle per farm, for the 628 farms, was 20 and, excluding the 160 farms with no cattle, the average was 27 head. On the average, the large farms had more cattle than the small farms.

Hogs, poultry and sheep were of minor commercial importance. The average number of hogs was five per farm and, excluding the 315 farms with no hogs, the average was 10 hogs. About 55 farms raised poultry commercially (200 poultry and over). Only five farms had flocks of over 1,000 poultry. No farms raised sheep for commercial purposes.

Off-Farm Employment.—Eighty of the 628 farms (13 per cent) had varying amounts of off-farm employment. The small farm groups had a higher proportion of farms with off-farm employment than the intermediate and large farm groups. The proportion of farms with off-farm employment in the small, intermediate and large farm groups was 20, eight and eight per cent respectively.

Age of Operators.—Fifty-three per cent of the 628 operators were in the 40 to 59-year age group. These operators made up about the same proportion in each of the size groups of farms (Table 1). The next most common age group was the under 40-year age group. A larger proportion of the operators of one and two-quarter section farms were over 60 years of age and, conversely, a smaller percentage under 40 years of age than for the operators of the other size groups of farms. The older farmers (60 years and over) comprised 18 per cent of the total farm population. They were more heavily concentrated in the two-quarter section and smaller size groups. About 34 per cent of the operators in the 60 years and over age group were old age pensioners.

Residence.—Most farmers (78 per cent) resided on the farms they were operating. Twenty-two per cent either farmed from town all year, or moved to town for the winter months. Ninety-four of the 628 farmers resided in town all year.

Some Changes of Farm Organization on 85 Farms on Haverhill Loam Soils in Southwest Saskatchewan, 1956-61

Some of the 628 farms described previously were included in the study of "Changes in Farm Organization on Prairie Grain Farms on Haverhill Loam Soils of the Brown Soil Zone, 1956". There were 85 farms in the 1956 study. In the reconnaissance survey in 1961, additional information was obtained as to the kind and extent of changes that had occurred during the five-year period (1956-61) on 74 of these 85 farms. The features of farm organization examined were size of farm, size of cattle and hog enterprises, tenure, and the manner in which land was acquired and disposed of during the five-year period.

The 85 farms studied in 1956 were classed as small (15), medium (25), and large (45) grain farms. Only 74 of these 85 farms were revisited in 1961, and 13 were small, 24 medium and 37 large. Eleven of the original 85 farms were excluded for several reasons. Two operators of small farms, one of a medium farm and five operators of large farms had quit farming to take other employment. One large-farm operator had died. Two large farm units that had been operated on a partnership basis in 1956 had split into four separate units.

Size of Farm.—Nine of the 13 farms (69 per cent) in the small size group had not changed the size of their holding, two increased and two decreased during the five-year period. One of the two farmers who increased their land holdings purchased an additional quarter section of land and the other purchased a half section and rented another quarter section. The decrease in size of the two farms was due to loss of a quarter section of leased pasture and hay land, rather than a decrease in the improved acreage.

Fifteen of the 24 farms in the medium size group remained the same in size, and seven were larger and two smaller. Five farms had increased in size by buying additional land and two by renting. The reduction in size resulted from one farmer selling a quarter section and the other renting out a half section.

Eighteen of the 37 large farms had not changed in size, 11 had increased and eight decreased in size. Increases in farm size were attained by purchasing additional land (six farms), purchasing and renting (three farms), and renting only (two farms). Decreases in farm size were due to loss of leases on land previously rented on seven of the eight farms. The other farmer sold a half section of land that he had owned in 1956.

The largest percentage gain in improved acres was on small farms, although the absolute gain in number of acres improved per farm was larger on large farms. The much higher percentage increase in improved acres than in number of quarter sections on small farms was largely due to unimproved leased land being replaced by improved land. Conversely, in the medium size group the percentage gain in improved acreage was not as high as the gain in total land area. The large increase in land area on medium farms was due to the acquisition of pasture land. This was substantiated by the large increases in the cattle enterprise on medium farms. The proportional increase in improved acres compared with total land area was about the same on large farms.

Tenure.—The proportion of owned land to total land area increased in all three size groups of farms during the five-year period (Table 2). The proportion of owned land to total land area on small farms increased from 77 per cent in 1956 to 87 per cent in 1961, 56 per cent to 76 per cent on medium farms, and 56 per cent to 71 per cent on large farms. There was a corresponding decline in the proportion of rented and leased land in each of the size groups of farms. The proportion of owned land to the total land area for the 628 farms was 68 per cent. The higher ratio of owned land on the 74 farms indicates that over time the ownership of land increases on farms as they become better established.

Cropping System.—The proportion of the total improved acreage in summerfallow was higher in 1961 than in 1956 in all size groups. This was particularly evident on small farms. In 1956, the small farms were largely on a three-year cropping system (crop-crop-summerfallow) and in 1961 the same farms were

Table 2.—Period Changes of Some Features of Farm Organization on 85 Farms on Haverhill Loam Soils in Southwest Saskatchewan, 1956-61

Items studied	Farms								
	Small			Medium			Large		
	1956	1961	Per cent change	1956	1961	Per cent change	1956	1961	Per cent change
Number of farms	15	13	−13	25	24	− 4	45	37	−18
Tenure (quarter section):									
Owned	1.7	2.0	18	2.3	3.5	52	4.8	6.4	33
Rented and leased	0.5	0.3	−40	1.8	1.1	−39	3.7	2.6	−30
Total	2.2	2.3	5	4.1	4.6	12	8.5	9.0	6
Acres improved	285	331	16	566	617	9	1,132	1,231	9
Acres summerfallow	103	151	47	229	276	21	489	571	17
Number of cattle	8.3	8.5	2	11.4	16.0	40	21.6	29.5	37
Number of hogs	3.2	1.2	−62	3.6	3.6	0	3.3	3.7	12

on a two-year cropping system (crop-summerfallow). The proportion of acres in summerfallow to total improved acres on small farms increased from 36 per cent in 1956 to 46 per cent in 1961, 40 to 45 per cent on medium farms, and 43 to 46 per cent on large farms.

The reason for the decrease in the use of stubble crops is difficult to assess since it may have been due to the low moisture reserves in the spring of 1961. On the other hand, it may be an indication of a trend toward a more extensive use of summerfallow in cropping, especially since this pattern was fairly well established on the medium and large farms in 1956.

Cattle and Hog Numbers.—The farms selected for study in 1956 were grain farms with few or no cattle and hogs. Therefore, the comparative results indicate the changes in cattle and hog numbers on grain farms only (Table 2).

Particulars on Land Acquisition

More land was acquired through purchase than by rental. Of a total of 119 quarter sections that had been acquired during the five-year period, 94 quarter sections (79 per cent) were purchased and 25 quarter sections (21 per cent) were rented.

Rented Land.—All but two of the 25 rented quarter sections had improved land. The two unimproved quarter sections were leased for pasture on an annual fee basis. The rental arrangements on the 23 improved quarter sections were one-third crop share on 22 quarter sections and half share on one quarter section. On the latter the landlord paid all taxes and half of the harvesting expenses. On the 22 quarter sections with a one-third crop share agreement, the land taxes were paid by the landlord on 15 quarter sections and by the tenant on seven quarter sections.

Purchased Land.—The sample farms acquired ownership on 94 quarter sections during the five-year period. Eighty-one quarter sections (86 per cent) were purchased and 13 quarter sections (14 per cent) were inherited. Twelve of the 13 inherited quarter sections were rented by the new owner before inheritance. The points of note with regard to the 81 quarter sections of purchased land were:

(1) Of the 81 quarter sections purchased between 1956 and 1961, 57 quarter sections (70 per cent) were purchased from farmers not related to the present owners and 24 quarter sections (30 per cent) from relatives

(2) Forty-six per cent of the 81 quarter sections were previously rented by the new owners. This is an indication that the renter often has a priority over other prospective buyers in purchasing land

(3) The average purchase price per quarter section of land with an average of 131 acres improved was $3,870, or $29.54 per improved acre. There was no significant difference in the purchase price of land bought by relatives and non-relatives

(4) The terms of purchases for the 81 quarter sections were 44 per cent cash, 25 per cent agreement for sale, nine per cent informal agreement, 16 per cent Farm Loan Board (more recently Farm Credit Corporation), one per cent Co-operative Trust Company, and five per cent Credit Unions. Since the percentage of cash transactions was fairly high, it would appear that well-established farmers had an advantage over beginners in competing for land in the area

(5) The average interest rate charged on the unpaid balance, including land purchases with no interest charge, was 3.93 per cent and, excluding the farms with no interest charge, 4.55 per cent.

Particulars on the land sold, or rented out by these farmers were very similar to those described under land acquisition.

A COMPARISON OF DAIRY FARMS IN THE NORTH OKANAGAN, BRITISH COLUMBIA, 1947 and in 1960

N. D. Turnbull

To supply a picture of the changes that have occurred on dairy farms in the North Okanagan area of British Columbia, economists from the Vancouver regional office drew 40 dairy farms from a sample of farms studied in 1947 and compared them with 81 dairy farms drawn from a sample of farms visited in 1960. The most significant changes may be succintly described as follows:

Capital.—Total farm capital rose from $13,287 per farm, on the average, in 1947, to $41,400 in 1960. The chief capital components constituted about the same proportion of the total in both years; real estate maintained about the same proportion but livestock declined to 14 from 16 per cent and equipment rose to 17 from 14 per cent.

Land Values.—The value of farm land averaged $46 per farm in 1947—$103 for improved and $12 for unimproved land. In 1960, comparative values had risen to $131, $217 and $37 respectively.

Table 1.—Average Capital Investment on Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— dollars —	
Real estate:		
Land	5,613	18,466
House	1,808	3,943
Other buildings	1,738	5,643
Total real estate	9,159	28,052
Livestock	2,116	6,048
Equipment:		
Special equipment	847	3,457
General equipment	1,044	3,508
Total equipment	1,891	6,965
Crops and feed	53	283
Small seeds, fertilizer	14	44
Building materials and forest products	54	8
Total farm capital	$ 13,287	$ 41,400

Table 2.—Distribution of Farm Capital, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— per cent —	
Real estate	69	68
Livestock	16	14
Equipment	14	17
Other	1	1
Total	100	100

Table 3.—Average Land Values of Owned Land per Acre, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	80
	— dollars —	
Improved land	103	217
Unimproved land	12	37
Average value, all land	46	131

Table 4.—Average Acres Operated, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— acres —	
Improved land:		
Owned	46	71
Rented	—	9
Total improved	46	80
Unimproved land:		
Owned	79	73
Rented	—	8
Total unimproved	79	81
Total acres operated	125	161

Table 5.—Average Grain and Hay Yields per Acre, North Okanagan, B.C., 1947 and 1960

District	Grain		Hay	
	1947	1960	1947	1960
	— tons —			
Enderby-Armstrong	0.90	0.86	2.00	2.00
Shuswap, Grindrod-Mara	—	—	2.90	2.71
Deep Creek, Salmon River and Salmon Arm Valley	—	—	2.36	2.51
Notch Hill and Grandview Bench	—	—	1.98	1.94

Table 6.—Average Number of Productive Man Work Units, Man Equivalents and Productive Man Work Units per Man Equivalent, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— number —	
Productive man work units	260	395
Man equivalents	1.46	1.51
Productive man work units per man equivalent	178	261

Land Use.—The farm acreage rose to 80 acres of improved and 81 acres of unimproved land, on the average, in 1960, from 46 and 79 acres, respectively, in 1960. Yields were about the same in 1960 as in 1947.

Labor.—Productive man work units rose to 395 in 1960 from 260 in 1947 and man equivalents to 1.51 from 1.46; p.m.w. units per m.-e. rose to 261 from 178.

Equipment.—The use of special equipment increased. The number of tractors rose to about three for two farms from about one for the same number of farms. The number of balers and that of forage harvesters rose to about three for four farms from none in 1947. Greater use was also made of milking machines, cars, and trucks.

Table 7.—Average Number of Special Machines in Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— number —	
Cars	0.62	0.68
Trucks	0.20	0.81
Total, cars and trucks	0.82	1.49
Tractors	0.45	1.48
Combines	—	0.16
Threshers	—	0.02
Balers and forage harvesters	—	0.76
Milking machines	0.40	0.91

Table 8.—Average Number of Animal Units and Cows Milked, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— animal units —	
Cattle	17.9	32.7
Horses	2.3	0.3
Sheep	0.1	0.2
Hogs	2.3	0.4
Other	1.0	0.6
Total animal units	23.6	34.2
	— number —	
Number of cows milked	9.5	18.0

Table 9.—Average Milk Production per Cow, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	78
	— pounds —	
Milk sold	5,887	7,915
Home use	542	342
Total production per cow	6,429	8,257

Table 10.—Average Current Expenses and Percentage Distribution of Current Expenses, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— dollars —	
Current expenses	1,623	4,418
	— per cent —	
Real estate levies	7.27	8.46
Repairs—land and buildings	1.11	2.11
Crop expenses:		
Seed purchases	2.46	2.49
Sprays, inoculants, etc	0.19	0.23
Binder twine, crates, etc	0.12	1.45
Fertilizer	1.60	2.35
Total crop expenses	4.37	6.52
Livestock expenses:		
Cattle purchases	11.64	8.31
Other livestock purchases	2.28	0.34
Veterinary medicine	2.16	5.57
Feed	35.86	30.71
Total livestock expenses	51.94	44.93
Custom work	6.90	2.85
Equipment	15.53	21.80
Labor	11.46	11.02
Miscellaneous	1.42	2.31
Total current expenses	100.00	100.00

Table 11.—Average Current Farm Receipts and Sources of the Receipts as Percentage of Total Current Receipts, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— dollars —	
Current farm receipts	2,776	7,215
	— per cent —	
Crop receipts:		
Grain sales	3.56	1.27
Hay and fodder	3.74	1.48
Fruit and vegetables	1.48	1.42
Total crop receipts	8.78	4.17
Livestock receipts:		
Cattle sales	10.84	10.30
Hogs	12.88	1.86
Other livestock	1.84	0.59
Total livestock receipts	25.56	12.75
Farm produce:		
Milk, cream and butter	59.28	78.68
Eggs	3.97	1.38
Other	0.11	0.02
Total farm produce	63.36	80.08
Custom work	0.62	0.77
Forest products and miscellaneous	1.68	2.23
Total current receipts	100.00	100.00

Table 12.—Average Operating Statement of Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— dollars —	
Farm receipts:		
Current receipts	2,776	7,215
Capital receipts	79	308
Inventory increase	1,076	2,867
Total farm receipts	3,931	10,390
Farm expenses:		
Current expenses	1,623	4,418
Capital expenses	1,116	3,109
Inventory decrease	31	115
Total farm expenses	2,770	7,642
Family farm income	1,161	2,748
Less: Interest on investment	664	2,070
Value unpaid family labor	560	596
Operator's labor income	−63	82
Plus: value of perquisites	577	728
Operator's labor earnings	514	810

Table 13.—Average Non-Farm Income, Dairy Farms, North Okanagan, B.C., 1947 and 1960

	Dairy farms 1947	Dairy farms 1960
Number of farms	40	81
	— dollars —	
Pensions, investments, etc	159	239
Non-farm wages	213	386
Total non-farm income	372	625

Livestock.—The average number of animal units rose to 34.2 in 1960 from 23.6 in 1947; cattle accounted for 32.7 units in 1960 and 17.9 in 1947. The number of milk cows rose to 18 per farm on the average, from close to 10 in 1947.

Milk Production.—Average annual milk yield per cow rose to 8,257 pounds in 1960 from 6,429 in 1947. Average sales increased to 7,915 pounds from 5,887 pounds per cow.

Income.—Current expenses on the other hand, rose to an average of $4,418 per farm in 1960 from $1,623 in 1947. Livestock and custom work expenses declined but real estate levies, land improvement and building repairs, and crop and equipment expenses rose as a proportion of total expenses.

Current receipts, on the other hand, rose to $7,215 in 1960 from $2,776 in 1947. Sales of milk, cream and butter represented as much as 79 per cent of these receipts in 1960 but only 59 per cent in 1947. Receipts from hogs rose to 13 per cent from only two per cent of the total.

Average operator's labor income rose to $82 in 1961 from $63 in 1947 and average family income to $2,748 from $1,161. Average non-farm income rose to $625 per farm in 1960 from $372 in 1947.

WORLD FOOD CONGRESS

In 1959 the Tenth Session of the FAO Conference adopted a resolution authorizing an international Freedom from Hunger Campaign that would extend from 1960 into 1965. One clause of that resolution also authorized the Director-General of FAO to make "preparations for a World Food Congress in 1963. . . ."

The Congress, in Washington, D.C., June 4-18, 1963, will begin on the 20th anniversary of the last day of the Hot Springs Conference and, in the words of Dr. B. R. Sen, Director-General of FAO, it will give "the Member Nations of FAO a unique occasion to rededicate themselves to the great objectives and aspirations embodied in the Hot Springs resolutions."

The Congress will focus world opinion on the aims of the Freedom from Hunger Campaign. The objective of that campaign is to create and develop an awareness, among developed and developing countries, of the hunger and malnutrition problems that persist in the world, and may worsen in magnitude and intensity unless all countries get together to help solve these problems.

The campaign works on three broad fronts: a) information and education, b) research, and c) national action programs. The first program consists of studies geared toward the collection and dissemination of information on a) means of dealing with hunger and malnutrition, b) economic and technical possibilities of increasing production and improving distribution, and c) the use of available technical and economic knowledge and resources to tackle relevant problems. The research program is concerned with problem-oriented projects in agricultural development which emphasize production, needs, and consumer attitudes. Action programs, of either a pilot or demonstration type, deal with improvements regarding a selected or an associated group of problems in food supplies and nutrition.

The Congress itself will stress the work done and to be done to combat hunger and malnutrition. It will assess current and future needs for food and nutrition for the world as a whole and for particular regions; study the measures required to meet these needs; stimulate world-wide co-operation in reaching objectives; and recommend multilateral action to promote specific programs designed to fulfill these objectives.

AGRO-BUSINESS TOUR OF EUROPE

To provide "agro-business" Canadians with an opportunity to meet their counterparts in Europe and familiarize themselves with various aspects of agriculture on that continent, the Canadian National Railways are organizing an agricultural tour of England, Scotland, France, Belgium, Switzerland, Italy, Denmark, Holland, and Western Germany. Thirty days will be spent overseas either in June or in September 1963.

Among other things that may come under the scrutiny of the Canadian visitors, the following may be listed:

1) the feed manufacturing industry, 2) commercial feed lot practices, 3) research in breeding and feeding practices—for beef cattle and bacon hogs, 4) livestock abattoirs and meat processing plants, 5) processing of dairy products, 6) the fertilizer industry, 7) the wholesale marketing of fruits and vegetables, 8) the potato industry, 9) farm machinery plants, 10) wheat processing plants, 11) breweries and distilleries, 12) the processing of wines, vegetable and fruit juices for domestic consumption, 13) food technology institutes, 14) agricultural manufacturers associations, 15) agricultural marketing boards or co-operatives, 16) agricultural departments of universities, and governmental departments of agriculture.

Arrangements, for the tour, are being made by Mr. T. G. Sévigny, Agricultural Development Officer, Canadian National Railways, Montreal, P.Q. *The Economic Annalist* has prepared these short notes about the tour as a service to its readers who may wish to take advantage of this opportunity of studying European agriculture.

PUBLICATION OF THE ECONOMICS DIVISION

The Market for Eight Fresh Vegetables in Western Canada. King, E.E.R. Ottawa, June 1962. pp. 46 + charts, graphs and maps.

A detailed study of markets for eight fresh vegetables which are highly perishable, for the most part, and must thus be marketed seasonally. The author centers his attention on the demand for fresh vegetables in Western Canada, interregional supply competition, the Alberta growers' competitive position in Western Canada, the size of the commercial market and its effects on Alberta producers, and the potential market for added supplies of the eight vegetables studied, for Alberta producers.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Yearbook of National Accounts Statistics, 1961.—Statistical Office of the United Nations, Department of Economic and Social Affairs. New York. 1962. pp. XXIV + 305. Price: $U.S. 4.00.

This fifth issue of the U.N. Yearbook of National Accounts Statistics contains data for 98 countries and territories and detailed national accounts estimates for 77 countries. The estimates are presented in such a manner as to facilitate international comparability and provide a coherent framework of analysis.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. 11, No. 5, May 1962.—Food and Agriculture Organization, Rome, Italy.

The May 1962 Bulletin includes an article on *Agricultural Statistics and Multisubject Household Surveys* and the usual *Commodity Notes* and *Statistical Tables.*

Economic and Social Consequences of Disarmament. Report of the Secretary-General Transmitting the Study of his Consultative Group.—Department of Economic and Social Affairs, U.N., New York. 1962. pp. IX + 66. Price: $U.S. 0.75.

The group of U.N. experts have written their report on the assumption that, if nations agreed, disarmament would proceed rapidly and be general and complete. They have studied the use of resources for military purposes and their alternative use for peaceful ends. They have examined the structural problems of conversion, the impact of disarmament on international economic relations, its effects on the volume and framework of aid for economic development, and its social consequences.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

DECEMBER 1962 Vol. XXXII No. 6

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G. P. BOUCHER, Editor

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Minister of Agriculture

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961..........	233.3	224.8	179.6	270.0	253.0	282.2	226.7	129.2	124.0	173.1
1961										
Jan..........	231.7	233.2	189.3	277.1	261.3	273.0	223.5	129.2	124.4	165.8
Feb..........	232.1	232.7	189.0	276.3	262.1	....	....	128.9	124.0	166.7
Mar..........	231.3	228.4	188.2	268.6	259.8	....	....	129.1	124.0	166.0
April..........	230.9	225.1	188.5	261.7	255.6	284.7	226.6	129.1	123.9	169.2
May..........	231.2	225.8	187.3	264.4	254.5	....	....	129.0	123.2	169.4
June..........	231.4	228.6	192.5	264.7	256.9	....	....	129.0	123.5	173.3
July..........	234.5	228.3	191.3	265.3	257.1	....	....	129.0	124.9	173.4
Aug..........	234.5	216.9	168.5	265.4	244.2	289.0	230.0	129.1	125.3	176.4
Sept..........	235.3	219.0	165.7	272.3	246.9	....	....	129.1	123.2	178.1
Oct..........	235.3	220.3	165.3	275.3	245.5	....	....	129.2	123.3	177.9
Nov..........	235.3	219.6	164.2	275.0	245.4	....	....	129.7	123.6	180.1
Dec..........	236.5	220.0	165.8	274.2	246.6	....	....	129.8	124.5	180.5
1962										
Jan..........	237.0	218.9	166.7	271.0	247.2	281.8	233.6	129.7	124.8	179.8
Feb..........	237.2	219.2	167.5	270.8	246.6	....	....	129.8	125.0	182.5
Mar..........	237.1	217.3	167.1	267.5	246.1	....	....	129.7	124.4	184.3
April..........	237.4	219.2	166.4	272.0	246.5	291.6	235.8	130.3	125.8	184.1
May..........	239.1	222.8	168.9	276.7	248.3	....	....	130.1	124.5	186.0
June..........	240.3	228.8	172.0	285.7	252.9	....	....	130.5	125.6	186.6
July..........	241.3	235.1	174.7	295.5	257.8	....	....	131.0	127.0	186.7
August	242.5	237.7	171.7	303.7	262.3	294.2	236.0	131.4	128.4	188.2
Sept..........	241.8	231.7	165.9	297.5	257.4	....	....	131.0	126.8	....
Oct..........	241.6	232.1	166.0	298.2	255.8	....	....	131.5	127.2	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

ECONOMIC SITUATION IN 1962 AND ECONOMIC PROSPECTS for 1963[1]

World Economic Situation.—In 1962 a gradual slowing down of economic expansion became noticeable in most parts of the Free World. In the United States, for instance, the gross national product rose less than expected in the third quarter, to an annual rate of $555.5 billion. The increase of $3.5 billion from the second to the third quarter compared with the rise of $7.0 billion from the first to the second quarter. In Western Europe, although output increased in 1962, several difficulties emerged and the general pace of advance remained moderate.

The rate of growth of industrial production in Western Europe was much the same as in 1961 (+4.5 per cent) but smaller than in 1960 and 1959. In the Common Market Countries the over-all rise of industrial production was a little more pronounced. In Britain, where balance of payments difficulties forced the early adoption of curbs to internal demand and incomes, industrial production increased only slightly in 1962. In Japan gross national product is expected to rise by about six per cent in 1962, compared with increases of 13 per cent and 16 per cent in 1961 and 1960 respctively.

World trade in 1962 increased slightly more than in 1961, when the year-over-year rate was 4.3 per cent, but considerably less than in 1960 and 1959. The comparatively favorable economic situation in the main importing areas in 1961 and 1962 strengthened the demand for agricultural raw materials. The import demand for foodstuffs in industrialized countries was influenced chiefly by the level of food production in these countries. In 1961 and 1962 the import demand for food was accelerated by Mainland China's large imports of grains, to make good that country's losses in domestic production.

World Agricultural Situation.—Total world agricultural production remained stable in 1961-62 but declined by one per cent on a per capita basis.

Total world stocks of agricultural products declined, chiefly because of lower production. Stocks of grains were 15 per cent lower on July 1, 1962 than a year earlier; the largest drop was in wheat stocks. However, stocks of coffee, soybeans, butter and cheese increased in 1961-62.

The volume of international trade in agricultural products continued to expand and rose by about four per cent in calendar year 1961. This rise, however, was offset by a four per cent drop in average prices, because of abundant export supplies of most agricultural commodities. Exports under special terms remained an important factor in world agricultural trade, especially for wheat sold on concessional terms which now makes up more than one-third of all world wheat exports.

Many important developments in agricultural policy occurred in 1961-62. The agricultural policy of the United States is still dominated by the problem of surpluses, especially of grains. In Western Europe the Ministerial Council of the European Economic Community approved the first commodity regulations of the Six. The implementation of the agricultural policy of the EEC will likely lead to important shifts in European production and trade patterns and raise problems for many traditional suppliers of the European market. An important event in the history of international co-operation was the creation of the World Food Program. This program, which was jointly sponsored by the United Nations and FAO will come into operation in 1963; it will provide aid for economic development and to combat hunger and malnutrition in less-developed countries. About U.S. $100 million in food, services and cash will be distributed to less-developed areas to meet emergency situations, supplement inadequate diets and assist in development programs. Canada has pledged $5 million in cash and commodities to the World Food Program.

---

[1] From a report prepared for the annual federal-provincial Agricultural Conference, held in Ottawa, November 19-20, 1962.

Canadian Economic Situation—Economic activity in Canada gathered strength in 1961, and the upward trend continued in 1962 despite the pressure on the Canadian dollar in the exchange field in the first half of the year. Canada's GNP continued to rise and the seasonally adjusted annual rate of $39.4 billion was about eight per cent higher in the second quarter of 1962 than in the corresponding quarter of 1961.

Canada's commodity exports rose in 1962, reflecting a marked improvement of foreign demand for our goods. Domestic demand for consumer goods also rose. Spending advanced over the broad range of consumer goods and services, and showed particular strength in purchases of automobiles. Business spending on new plant and equipment rose moderately and outlays for home construction continued to increase.

Improvement in business conditions was reflected in the upward movement of industrial production which was nine per cent higher in the first seven months of 1962 than in the corresponding period of 1961.

The continued strengthening of industrial activity provided expanding opportunities for employment in 1962. The three per cent increase in the number of persons with jobs, on the basis of an eight-month (January-August) comparison, was one of the largest in recent years. Manufacturing and service industries together accounted for the larger part of the rise in employment, although most other industries were at higher levels than in 1961.

A secular decline continues in farm employment but the year-to-year decline has become less pronounced in recent years. In 1956-57 and in 1957-58 farm employment dropped by 32 thousand; in 1959 it dropped by about 20 thousand, in 1960 by 17 thousand, and in 1961 it changed very little. Average employment for the first nine months of 1962 was 16 thousand lower than in the first nine months of 1961. Crop failures in Western Canada in 1961 and alternative job opportunities in the non-farm industries in 1961 and 1962 contributed to the decline of the work farm force in 1962 (now about 658,000).

The consumer price index rose in 1962, chiefly because of higher food prices and a further rise in cost of services. The wholesale price index also has been rising fairly steadily since the initial upturn in May 1961. Higher prices reflect, in part, the lowering in the external value of the Canadian dollar which, in terms of U.S. Funds, declined gradually from about 97 cents in mid-1961 to about 95 cents in the spring of 1962. On May 2, 1962 a new fixed par value of 92½ U.S. cents was established.

Agricultural Situation in Canada, 1962.—The Canadian agricultural output in 1962 increased by about one-third over that of 1961 mainly as a result of the large grain production in the Prairie Provinces. Farmers' cash returns from farming operations in 1962 are expected to be slightly above the record high returns of $2.96 billion established in 1961. Cash income from the sale of livestock and livestock products, however, is expected to reach a new record in 1962, largely as a result of higher returns from the sale of cattle, calves and hogs. Income from dairy products is expected to continue its upward trend because of slightly higher production and somewhat higher prices. Total returns to poultry producers are expected to be higher than in 1961. Production of eggs will be larger for the year but prices will average lower. Partially offsetting the gain in income from livestock and livestock products is an anticipated reduction in total returns from the sale of field crops.

Farm operating expenses and depreciation charges are expected to continue to rise during 1962 and will reflect in part, at least, the continued upward movement of the prices paid by farmers for commodities and services used in the farm business. However, the increase in inventories, together with higher cash income from farming operations, will far more than offset increasing operating expenses and depreciation charges to give an estimated total farm net income of close to $1.6 billion, compared with about $1 billion in 1961.

World Economic Outlook.—The year 1962 has been one of general economic expansion for the Free World. Toward the end of the year, however, the pace of advance is moderating. In North America the cyclical upswing which contributed to a sharp expansion between 1961 and 1962 has now lost much of its earlier momentum. In overseas industrial countries the slower pace of growth encountered in 1961 still prevails.

On the basis of current trends, the pace of business activity in the world at large may be easing for the present. At the same time the currently strong trend of incomes in the major industrial countries should provide the basis for a continuing growth in purchases of consumer goods. This trend may be the strongest in E.E.C. countries where consumption levels have been moving sharply ahead.

World Agricultural Outlook.—World agricultural production will likely be larger in 1962-63 than in 1961-62 and supplies for commercial trade will be ample. The world wheat output in 1962-63, for instance, is expected to be the second largest in history. Mainland China is expected again to be a large importer, South America will likely increase imports and Japan will also be a large importer. Because of larger wheat supplies in exporting countries competition will be strong for existing markets. However, world coarse grain production in 1962-63 will remain at about the same level as in 1961-62. Western Europe is likely to have a larger harvest of coarse grains than last year and this may result in a weakening of import demand in that region this crop year. World meat and milk production is expected to continue to rise in 1962-63.

In Western Europe a more rapid increase in production than in consumption of some foodstuffs may slow down the growth in food imports in the years to come. If Britain joins the Common Market on the basis of the regime for agriculture now contemplated, surplus production in continental Western Europe will have access to the British market. This will be to the disadvantage of present Commonwealth and other suppliers even if the prices within the expanded E.E.C. are not set so high as to encourage an expansion of farm output in Britain itself.

Economic Outlook for Canada.—Canadian output continued to increase in 1962. The higher demand levels of 1962 are, in general expected to be sustained, or improved in 1963, and, consequently a further advance in aggregate production should take place in 1963.

Consumer spending is likely to go on rising next year, continuing the strengthening that has been underway in 1962, and representing a major expansion force in over-all activity. The trend in personal income was strongly upward in 1962 and this provided a firm base for a vigorous rise in personal expenditures on consumer goods and services while permitting a large increase in personal savings.

Business recovery and a subsequent expansion in the United States led to a rapid upswing in Canadian exports to the American market in 1962 and accounted for the total increase in exports. Exports to overseas markets, as a whole, remained close to the high levels reached in 1961. With a continuing upward trend in economic activity in the major overseas market areas, though in some cases at a smaller rate, Canadian overseas sales appear likely to be maintained, but could show considerable variation on an individual country basis. Meanwhile the improved competitive position of Canadian producers, resulting from the lower exchange value of the dollar, will help sell Canadian goods in foreign and domestic markets.

Economic Outlook for Canadian Agriculture.—Total cash income from farming operations is expected to be well maintained during the year 1963. Marketings of cattle are expected to increase as a result of the present build-up of herds in Western Canada. Prices may decline somewhat, but the reduction is not likely to be large enough to offset the higher marketings, and total income from this source may thus be somewhat higher than in 1962.

Hog marketings in 1963 are expected to rise above current levels in Eastern Canada, and to be lower in Western Canada until the fall, at which time there may be a marked upswing. For the country as a whole, total marketings will be at about the 1962 level, and average prices will not change very much.

Production of dairy products in 1963 is expected to remain close to 1962 levels. Sales of milk and milk products in commercial channels may increase slightly, because of urban population growth.

The egg output in the first half of 1963 is expected to fall below the level of the first half of 1962. Output later in the year will depend on the size of the hatch in earlier months.

The large wheat crop of 1962 will lead to higher marketings during the first half of 1963 than in 1962. Even if the 1963 crop is not so large as that of 1962 there will, in all likelihood, be enough wheat to maintain fall marketings in 1963 at the 1962 level. Consequently, it is expected that total income from wheat will exceed, by a substantial margin, the returns realized in 1962.

If total grain production approximates that of 1962, then total farm gross income and total net income should come close to the estimated levels of 1962. However, if grain output should decline to the average production for the 1952-61 ten-year period, total farm net income would fall below the 1962 level but not nearly so low as in 1961. Farm operating expenses are expected to continue to increase in 1963. The volume of purchases of farm supplies will be as great or greater than in 1962 and prices of purchases are likely to continue their gradual upward trend.

SEMINAR ON CANADA'S LAND RESOURCES

Mr. A. T. Davidson, Director of the Agricultural Rehabilitation and Development Administration invited 32 Canadian experts in land use in the fields of agriculture, forestry, recreation, wildlife, and urban and regional planning to participate in a seminar on the inventory of land resources in Canada. The seminar was held in Ottawa on November 29 and 30 under the chairmanship of Mr. L. E. Pratt, ARDA's Agricultural Land Use Co-ordinator.

The 32 delegates unanimously agreed on the need to undertake a general study of Canada's land use capabilities. In doing so ARDA will be implementing an earlier recommendation of the Special Committee of the Senate on Land Use in Canada and of the 1961 national Resources for Tomorrow Conference.

FLUID MILK CONSUMPTION IN SELECTED CANADIAN MARKETS, 1958-61

Gilles LeBel

As part of its studies of the Canadian milk market, the Marketing Section of the Economics Division has made estimates of per capita milk consumption in 18 of the largest milk markets in the country and extended its research into an analysis of the factors making for variations in consumption among cities.

The markets studied comprise areas or regions which are defined as milk markets by provincial authorities. All dairies and all producer-distributors located within a given area have to report the volume of their sales. The data contained in their reports find their way into *"Fluid Milk Sales,"* a monthly publication of the Dominion Bureau of Statistics. This publication is a valuable source of data but, unfortunately, for our research work on market areas, it does not delimit the sales area of a given market and for most markets it only reports on total sales by dairies located in the particular market areas. Moreover, it does not record, as sales within a market, those sales which are made by outside dairies selling in this market. We have thus found it necessary to make some intricate adjustments in D.B.S. figures, some of which are of a somewhat arbitrary character. Nevertheless, we are confident that our estimates are marred only by a small margin of error.

Difficulties Encountered in Estimating Milk Consumption

The Dominion Bureau of Statistics, provincial Milk Control Boards, and the Central Mortgage and Housing Corporation were the sources of raw materials for our estimates. We believe that, at this point, we should take our readers into our confidence and explain the difficulties encountered in converting raw material, however abundant and valuable, into reliable estimates. This we shall do by dividing Canada into two broad areas, namely western Canada, including Manitoba and all provinces west of Manitoba and eastern Canada, including Ontario and provinces east of Ontario.

Western Canada.—In British Columbia dairies report on a regional basis. The Lower Mainland Region includes metropolitan Vancouver, the city of Chilliwack and some large towns. Distributors ship milk to Vancouver Island and to various coastal and interior points that do not have dairies. Data are available for shipments from Vancouver Island but not for other out-shipments. Our discussions with dairy managers and others in 1959 lead us to conclude that sales outside the region would represent about five per cent of reported sales and we have adjusted the sales data accordingly.

For calculations of per capita consumption we used figures on urban population in the B.C. Lower Mainland as reported in the 1956 and 1961 censuses: intervening years were calculated on the assumption of a straight line population figures for intervening years were calculated on the assumption of a straight line trend. Some bottled milk is undoubtedly sold to rural families would have little effect on estimates of per capita consumption.

After careful consideration of all available data, sales in Victoria, as reported in *"Fluid Milk Sales"* and adjusted for shipments to Vancouver Island from the Lower Mainland, were accepted as the correct figure for the metropolitan area as defined in the 1956 and 1961 censuses. The Milk Control Board figure for sales on Vancouver Island, properly adjusted, is higher. However, when it is related to the total population of the Island a lower estimate of consumption per person results. This latter figure would be an underestimate as it omits milk consumed in the farm home and milk which may be sold locally by producer-distributors in the smaller communities.

In Alberta the Board of Public Utility Commissioners requires that dairies report their sales of fluid milk in carefully defined urban areas. The Edmonton and Calgary milk market areas, so defined, are smaller than the metropolitan areas as defined for census purposes. However, it is practicable to estimate population for the specified areas from census data. Some dairies, because of difficulties in splitting sales on milk routes which cross limits of the specified areas, report for slightly different areas, but any error from that source would be small. Changes in city limits over the years have been taken into consideration in estimating the population for intercensal years.

The Saskatchewan Milk Control Board obtains data on sales of milk in Saskatoon and Regina. The Board's figures, especially for Saskatoon, are much lower than the total sales of the dairies in the cities, as these dairies also supply many towns and villages. City sales as reported to the Milk Control Board are considered as sales within the census metropolitan area and, accordingly, population figures of the latter have been used for calculating consumption per person. The Winnipeg market was the only market studied in Manitoba. Sales reported are for dairies within metropolitan Winnipeg. There are some outshipments. Indeed milk bottled in Winnipeg may be found in Fort William stores. However, after discussion with dairy managers and others we concluded that the bulk of the outshipments were to summer resort areas frequented by Winnipeg residents. We made a small arbitrary adjustment for outshipments.

Eastern Canada.—The Ontario Milk Control Board defines the market area for each dairy, which makes it possible to define urban market areas with some precision. The areas as defined in the Ontario *"Monthly Dairy Report"* were used in our research work, but we had to make a slight adjustment for the fringes of the Hamilton market. There are small dairies on the fringes of the Toronto and Windsor market areas which sell both in and outside of these markets. No adjustment was made for this situation as the number of people served represented less than five per cent of all people in the market area.

The Quebec Dairy Industry Commission defines the market area for each dairy in that province. Markets of major cities tend to be slightly larger than corresponding census metropolitan areas.

According to dairy officials and managers the various market areas in the Maritime provinces are somewhat larger than the census metropolitan areas.

Variations in Milk Consumption Among Cities

For the purpose of our analysis, the market areas were divided (Table 1) according to the rate of total fluid milk consumption per person. Variations among cities, on this basis, are quite wide. The rate of milk consumption, excluding cream, appears to be about 40 per cent higher in London, Ontario than in Three Rivers, Quebec. Moreover, the rate of milk consumption appears to have increased a little only in Hamilton, Ottawa-Hull, Victoria and Sydney during the last four years while it declined in every other city except London where it remained almost constant. The Prairie Provinces and Ontario are areas in which per capita consumption is relatively high whereas British Columbia, Quebec and the Maritime Provinces have low milk consumption rates.

Variations in purchases per person of two per cent milk and skimmed milk products combined were still more pronounced among these market areas. For example, consumers in London used almost 11 times more skimmed milk, chocolate milk and partly skimmed milk per person than did consumers in Three Rivers.

Price.—Price is generally believed to be one of the most important factors influencing per capita milk consumption. Actually, even quoting two prices for each city, as we have done, does not give the full milk price picture. Some cities such as London, Toronto and Windsor have a large consumption of two per cent milk which sells at lower prices than whole milk. This product is not available in all cities. Likewise, three-quart jugs of fluid whole milk were available up to the end of 1961 in stores of a number of Ontario communities at 59 cents and have been sold in Toronto at 54 cents[1]. This is much lower than any of the prices shown in Table 1. However, no clear-cut relation between price and consumption per person is evident. Edmonton, with the lowest milk price of any city, ranks high in its rate of milk consumption, but three Ontario cities with much higher prices have higher rates of milk consumption. Relatively high milk prices could well contribute to the low rate of consumption in Sydney and Victoria but Quebec and Three Rivers, with lower rates of milk consumption, have, with Edmonton, the lowest prices for home delivered milk in Canada.

Table 1.—Fluid Milk Consumption and Market Characteristics, 1958-61

Market Area	Milk consumption			Price per quart[b]		Weekly wages[d]	Milk foundation	Active milk promotion
	1958	1961	1958–61	Home delivery	Stores (cartons)			
	—lb/capita—		per cent change	—cents—		dollars		
London	337.4	340.0	+ 0.8	24.0[c]	22.0[c]	72.1	yes	yes
Windsor	345.0	339.6	− 1.6	25.0[c]	22.0[c]	85.0	—	—
Hamilton	301.9	311.3	+ 3.0	25.0[c]	23.0[c]	84.0	yes	yes
Saskatoon	310.5	302.3	− 2.7	23.0	25.2	67.7	no	no
Ottawa-Hull	274.2	293.9	+ 6.7	25.0	23.0	70.5	yes	yes
Edmonton	313.8	290.0	− 8.2	22.0	21.6	72.6	yes	yes
Toronto	299.9	285.6	− 5.0	25.0	23.0	79.0	yes	yes
Winnipeg	292.9	280.6	− 4.3	24.0	22.0	68.6	no	no
Regina	282.6	269.4	− 4.9	23.0	24.0	69.7	yes	no
Halifax	270.7	266.1	− 1.7	24.0	27.0	67.0	no	no
Montreal	275.5	264.1	− 4.3	23.0	24.0	74.6	yes	—
Vancouver	281.1	258.5	− 8.7	25.0	23.2	81.4	no	—
Sydney	246.1	257.7	+ 7.5	24.0[c]	27.0[c]	62.7[e]	no	yes
Calgary	271.8	254.3	− 6.9	22.5	22.6	73.6	yes	—
Quebec-Lévis	269.2	253.6	− 6.2	22.0[c]	24.0[c]	63.8	no	—
Saint John, N.B.	279.8	247.7	−13.1	23.0	25.0	61.4	yes	yes
Victoria	238.5	243.6	+ 2.1	25.0[c]	24.0[c]	74.7	yes	no
Three-Rivers	237.1	235.5	− 0.7	22.0[c]	24.0[c]	70.1	no	—

[a] Includes whole milk, two per cent milk and skim milk products.

[b] Data supplied by D.B.S., January 1962.

[c] Data supplied by dairy managers in 1959 and 1960.

[d] Average weekly wages and salaries, industrial composite, 1960. *Review of Employment and Payrolls*, D.B.S. 1960.

[e] Provincial average.

Income.—The best available indicator of variations in income among cities is average wage rates. This indicator has serious limitations as it does not reflect numbers employed or the prevalence of two or more wage earners in one household. Nevertheless, the data suggest some relation between average wage rates and milk consumption. Most of the Quebec and Maritime cities, with relatively low milk consumption rates, have relatively low wage rates, whereas the Ontario cities have relatively high wage rates. Indeed, Victoria, Vancouver, Calgary and Montreal are the only cities among the nine with lowest milk consumption rates that are above average in wage rates. In two of these four, namely Victoria and Vancouver, the proportion of people over fifty years of age is the highest in Canada.

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[1] These prices have increased somewhat in 1962.

Merchandising Practices.—In British Columbia, Manitoba and Ontario the Milk Control Boards exercise relatively little control over the retail distribution of milk. As a result in these three provinces it has become customary for stores to sell milk in cartons at prices lower than those of home delivered milk. Chain stores, in particular, have sold milk at low prices. A large proportion of the milk is probably sold through retail stores. The available statistics combine retail store sales of milk with sales to restaurants, institutions, etc. as wholesale sales; however, in each of the eight markets studied in these three provinces wholesale sales made up more than 50 per cent of the total. We should note here that, with the exception of Vancouver and Victoria, the eight markets are among the top nine in milk consumption per person.

Another merchandising practice which may have an effect on milk sales is the introduction of two-quart and larger containers at discount prices. Two-quart cartons of milk have been available in retail stores in a number of cities and in most of them the price was one cent below that of two one-quart cartons throughout the greater part of the period studied. Their introduction came first in cities with a large volume of retail store sales of milk.

In the Ontario cities, all of which have relatively high rates of consumption, consumers have a wide choice of types of milk, kinds and sizes of containers and kinds of service. Some of the variation in milk consumption rates probably stems from merchandising practices, such as store sales versus delivery, paper cartons versus glass bottles as well as the relative price of whole milk and skimmed milk.

Low Fat Milk Products.—Table 2 indicates a rather strong relation between consumption of partly and fully skimmed milk products and total milk consumption. The consumption of fluid whole milk per person in cities with high rates of consumption of two per cent and skimmed milk products is generally

Table 2.—Substitution of Whole Milk by Low-Fat Milk, 1958-61

Market area	Whole milk		Low fat milk		Change in rate consumption 1958–1961		Decrease covered by increase (per cent)	Introduction of 2 per cent milk
	1958	1961	1958	1961	Whole milk	Low fat milk		
	−lb/capita−						per cent	year
London	256.7	231.0	80.7	109.0	−25.7	+28.3	110	1957
Windsor	294.7	265.9	50.3	73.7	−28.8	+23.4	81	1957
Hamilton	262.3	240.6	39.3	70.7	−21.7	+31.4	145	1956
Saskatoon	288.6	274.6	21.9	27.7	−14.0	+ 5.8	41	b
Ottawa-Hull	244.3	236.5	29.9	57.4	− 7.8	+27.8	36	1957
Edmonton	288.1	242.0	25.7	48.0	−46.1	+22.3	48	1960
Toronto	236.9	204.5	63.0	81.1	−32.4	+18.1	56	1956
Winnipeg	240.8	221.9	51.9	58.7	−18.9	+ 6.9	37	1957
Regina	261.4	244.6	21.2	24.8	−16.8	+ 3.6	21	b
Halifax	240.2	235.1	30.5	31.0	− 5.1	+ 0.5	10	b
Montreal	263.7	248.4	11.8	15.7	−15.3	+ 3.9	25	1958
Vancouver	252.6	218.8	28.5	39.7	−33.8	+11.2	33	1957
Sydney	235.4	244.7	10.7	13.0	+ 9.3	+ 2.3	—	b
Calgary	250.8	208.9	21.0	45.4	−41.9	+24.4	58	1959
Quebec-Levis	264.6[a]	245.6[a]	4.6	8.0	−19.0	+ 3.4	18	1958
Saint John, N.B.	265.8	239.3[a]	14.0	8.1[c]	−26.5	− −	—	b
Victoria	224.6	224.3	13.9	19.3	− 0.3	+ 5.4	18	1957
Three Rivers	237.1	224.9[a]	0	10.6	−12.2	−10.6	—	1961

[a] All or some quantity of low-fat milk (either skimmed milk or 2 per cent milk) is included in the whole milk figure, but in these cases the total sale of low fat milk should not amount to very much.

[b] Two per cent milk is not yet available in these markets.

[c] Does not include buttermilk and chocolate drink as less than three firms reported.

quite close to that in cities with low rates of low fat milk consumption. Saskatoon and Toronto are the main exceptions. Those who are now buying two per cent and skimmed milk would not necessarily replace these with fluid whole milk if low fat products were not available. They might replace them with concentrated products.

Promotion.—Another factor which probably has considerable bearing on milk consumption in cities is the existence and effectiveness of programs of consumer education. The information available on the sums spent in advertising is too limited to justify any conclusions as to milk consumption, but we have the impression that most of the cities with a high rate of milk consumption have highly developed promotion programs, either through a milk foundation, or an an individual dairy basis, or both. Some cities have no milk foundation, but individual dairies are often aggressive. The Windsor and London rates of consumption are also influenced by United States advertising. Windsor also has a dynamic school milk program. Previous research,[1] however, suggests that the influence of such programs is quite small. Sydney was one city with relatively low milk consumption where milk promotion appeared to be quite aggressive and this may account for the upward trend in the Sydney market.

Availability of the Product.—Shortage of local supply could be an important factor in the rate of milk consumption. Victoria, Regina, Calgary and Sydney are deficit milk markets in that city milk requirements are not fully met by local producers. In Sydney the dairies have to go as far as Truro for a time during the year as the Sydney area produces only a part of its fluid milk requirements. In the case of Victoria, supplementary milk is shipped from Vancouver. Milk is brought in from Lethbridge to Calgary. Regina uses a large volume of reconstituted milk during the winter months. Although the housewife may be incapable of distinguishing reconstituted milk from fresh milk she may tend to be biased against reconstituted milk. Distributors in Regina mentioned complaints regarding the quality of milk that the housewife thought was reconstituted milk but in fact was fresh. Moreover, there may be occasions when the reconstituted milk does have a distinctly different flavor than fresh milk, especially when butter is used in lieu of cream.

General Conclusions.—A recent gradual decline in per capita consumption of fluid whole milk can be observed in almost every Canadian market. On the other hand, per capita consumption of skimmed milk products (including two per cent, buttermilk and chocolate milk) has increased and, in some instances, this increase has offset much of the decline in the rate of whole milk consumption. According to our estimates, there was a significant increase in consumption of skimmed milk products between 1958 and 1961 in most of the cities.

We did not determine any single individual factor which might exert a predominant influence on the rate of milk consumption in any market area. Rather, a combination of factors appear to determine the level of milk consumption. One which appears to be important is the one over which dairies have the greatest control, that is, promotion.

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[1] Drayton, L. E., S. E. Kidd, and D. W. Oke, *School Milk in Canada,* Economics Division, Canada Department of Agriculture, Ottawa, December 1961.

POTATO INDUSTRY IN ALBERTA 1962[1]

(PART I)

STRUCTURE

E. E. R. KING

Potatoes are produced commercially in two main areas of the province (Figure 1). The larger of the two areas encompasses the irrigation land in the southern part of the province, extending from Lethbridge on the west, to Medicine Hat on the east, with the apex in the Countess and Rosemary country north of Brooks. Preliminary estimates indicate that the commercial acreage in the irrigation districts is over 9,390 acres for the crop year 1962-63.[2] The second major area of production is located within a thirty-mile radius of Edmonton where, according to preliminary estimates, there are 3,135 or more acres in potatoes. Other areas, when combined, account for about 1,200 to 1,500 acres of commercially-grown potatoes; they comprise Calgary, Red Deer-Lacombe, Edson-Peers, and the Peace River District, including Grande Prairie and Peace River.

As one moves from south to north there is a decrease in altitude and in the frost-free period and an increase in annual precipitation. In the irrigation districts of the south the elevation ranges from 2,600 to 2,900 feet above sea level. The frost-free period is about 120 days and the annual precipitation 13 inches, of which 9 inches fall during the growing period. Farther north, in the Edmonton area, the elevation ranges from 2,100 to 2,300 feet above sea level. The frost-free period is 80-95 days and the annual precipitation 17.5 inches, of which 13 inches fall during the growing season. North of Calgary there are no major irrigation schemes and growers rely on annual precipitation, although a few growers supplement the rainfall with sprinkler systems.

Within the province, several governmental agencies serve the potato industry. One of these warrants special attention. This is the Crop Protection and Pest Control section of the Field Crops Branch of the Alberta Department of Agriculture, which administers a Bacterial Ringrot Control Program. This program is directed at controlling the incidence of bacterial ringrot in potatoes grown for commercial sale. Bacterial ringrot of potatoes was first reported in Alberta in 1937. By 1939 rot damage in field and in storage was so severe, especially in irrigated districts, that growers and others requested the provincial government to take action. Investigations, surveys and studies by the Canada and Alberta Department of Agriculture and the University of Alberta led to the establishment of a preventive and control program in 1939. With some modification this program is still in effect today.

By a Provincial Order in Council in 1939 bacterial ringrot was named a pest under the Agricultural Pests Control Act. Under the Act all the irrigation lands in the south and the vicinities of Calgary and Edmonton were designated as pest control areas. Within these areas all growers of one-quarter of an acre or more are required to obtain a potato planting and disposal permit. In effect the Department was authorized to control potato production, movement and marketing. In practice, annual field surveys are conducted by provincial

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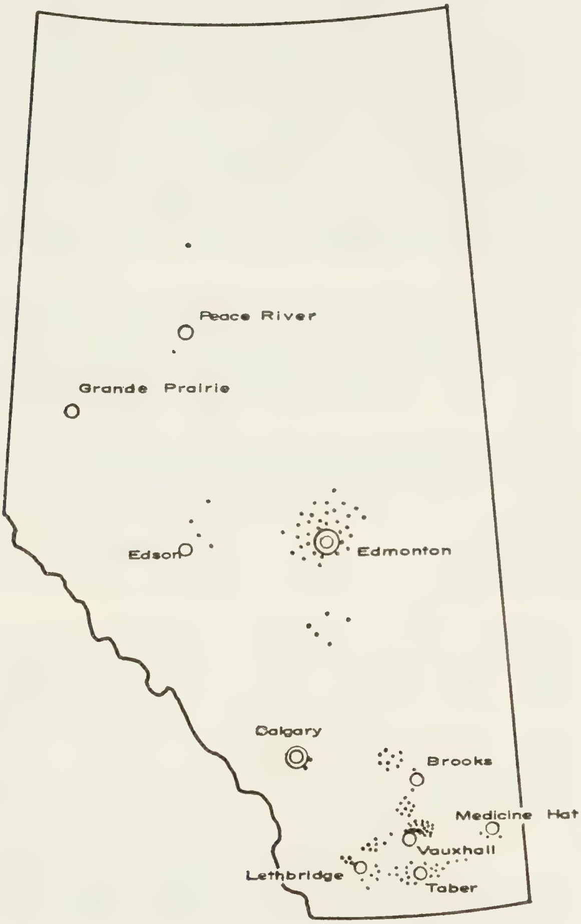
[1] This article, the first in a series of three dealing with the potato industry in Alberta describes the structure of commercial production of potatoes in the province. The second article will deal with the cost of production at different scales of operations, and the third will describe the market channels and discuss the effects of interregional competition on the supply of Alberta-grown potatoes.

[2] The writer is indebted to Mr. J. B. Gurba, Supervisor of Crop Protection and Pest Control Section of the Fields Crops Branch, Alberta Department of Agriculture. Mr. Gurba has been most co-operative in making data available and in supplying details concerning the Disease-Control Program which he administers. The writer also wishes to acknowledge the co-operation of Mr. L. G. Jorgenson, Supervisor of Special Corps of the Field Crops Branch, Alberta Department of Agriculture.

Figure 1.—Distribution of the Acreage Used for Commercial Production of Potatoes in Alberta



(Each dot = 100 acres)

inspectors on all commercial fields within the pest control areas, and federal inspectors are responsible for inspecting certified seed crops both within and outside the pest control areas. Any suspicious potatoes picked in the field, bin, or retail outlets by federal or provincial inspectors are forwarded to the Federal Plant Pathology laboratories where positive identification of the disease is made. The growers on whose premises bacterial ringrot has been found are notified by mail and instructed that none of their crop may be used for seed unless they have an isolated seed plot approved by the Provincial Department. They are also instructed to dispose of all their infected stock either through home use or through commercial channels where it will not be used for seed. The disposal is to be made before planting time or before seed is handled in the spring. To facilitate the task of securing clean seed, growers are supplied with a list of certified seed growers. In addition, the Provincial Department makes high pressure spraying equipment available to growers for the purpose of disinfecting root cellars and potato equipment. This is provided at a nominal cost to the grower.

In most cases infection has been in trace amounts with little disease loss to the grower or to the industry. However, the deadline for sales does pose a problem in the case of large-scale growers as there is always a danger that if pressure were put on a number of large-scale growers to sell their stocks a flood may occur on the market with depressing effect on price. Another concern of the Department is that the publicity required to implement the Bacterial Ringrot Control Program may have had an adverse effect on the sale of seed potatoes from this province. However, this may be an ungrounded fear since there are indications that the quantity of seed sold domestically by Alberta growers has been increasing in recent years.[1] In general, the program can be cited as a fine example of co-operation between the producers, the trade and both levels of government.

The Bacterial Ringrot Control Program has been described for two reasons. First it is considered to be one of the most comprehensive potato disease control programs in Canada, and it appears that is has worked reasonably well in controlling the spread of the disease. Second, the control program has become a very integral part of the potato industry in Alberta. Aside from its initial objective of controlling the incidence of disease among commercial growers it has served to upgrade the quality of seed used by growers and it has also provided a means of disseminating technical information to the growers. From the point of view of this study one of the more important complementary benefits provided by the program is the assembling of data pertaining to the acreage and the number of growers that operate under the Act. Since the pest control area covers the major potato producing areas within the province, the data collected under the program provide a very good base from which the entire commercial acreage for the province can be estimated. The Dominion Bureau of Statistics also makes estimates of the potato acreage in each province but their estimates include both commercial and non-commercial acreages.

Table 1 shows the number of growers and of acres registered under the Pest Control Act from 1952 through 1961. From the table one can readily discern a trend in the potato industry toward fewer growers and larger units. There is, of course, a certain amount of adjusting and readjusting continually taking place. For instance, twenty years ago the Raymond, Lethbridge and Coaldale areas were considered as the main potato growing areas in the irrigation districts, whereas today it is evident that a geographic shift has taken place and Vauxhall, Taber, Picture Butte and Rosemary are the main areas of potato production. Undoubtedly soil texture and topography have been important factors in concentrating the production in certain areas. Most of the potato growers in the irrigation districts are of Japanese descent, and these people are indeed proving themselves to be very competent growers.

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[1] Domestic sales of certified seed originating in Alberta have risen from 38,928 cwt. in 1955-56 to 65,378 cwt. for the 1959-60 crop year. See: *Crop and Seasonal Price Summaries,* Canada Department of Agriculture, Ottawa, *Vol. 13, Part II.*

The largest potato farms in the province are located in the Vauxhall area in the Bow River Project[1] and although there are few growers the typical unit produces 200 or more acres of potatoes annually. These growers are quite distant from the major market centres; nevertheless, they operate on a large enough scale to provide volume and continuity in supply, and as a result they deal directly with wholesale firms not only in Alberta but in the three other western provinces as well. It is common practice for truck vans to load potatoes directly from the root cellars of these growers and a few growers have integrated a van line as part of their business operations. In contrast, nearly all the growers operating small units, nine acres or under, are located within close proximity of a large city. Small-scale growers rely on entirely different marketing channels than the large scale growers, and it is therefore imperative that they locate close to market outlets. In the vicinity of Edmonton there are several small-scale potato farms but also many "medium" and a few large-scale units, the latter approaching 250 acres or more.

Table 1.—Potato Acreage and Number of Farm Registered under the Alberta Pest Control Act, 1952-1961[a]

Year	Number of farms inspected	Acreage inspected
1952	601	6,286
1953	603	7,530
1954	631	7,604
1955	599	7,968
1956	567	9,297
1957	485	8,783
1958	475	9,233
1959	442	11,676
1960	408	12,138
1961	370	12,466

Source:—*Alberta Department of Agriculture. Annual report, 1956-61. Edmonton.*

[a] Areas in which commercial production of potatoes takes place but not included under the Pest Control Act are: Peace River District, Edson and Peers, Red Deer and Lacombe. Provincial and federal inspectors estimate that the acreage in potatoes grown on a commercial basis, outside of the Pest Control area, ranges between 1,200 and 1,500 acres a year.

From the trend toward fewer growers and larger units one may anticipate that the Alberta potato industry is moving toward a type of oligopoly in which the supply of potatoes is becoming concentrated in the hands of relatively few producers. This is verified in Figures 2 and 3. Figure 2 plots the percentage of the total number of commercial growers against the acres per grower whereas Figure 3 plots the percentage of the total commercial acreage of potatoes against the acres per grower. Thus, from the two figures it can be seen that although 48 per cent of the commercial growers operate units ranging from one-quarter of an acre to nine acres they only account for five per cent of the total commercial acreage (or production). On the other hand, only about six per cent of the growers operate units of 150 acres or more but they account for 38 per cent of the total commercial acreage.

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[1] Irrigation project owned by Federal Government and administered by P.F.R.A.

Figure 2.—Percentage of Total Number of Commercial Alberta Potato Growers Operating Units of Different Sizes, 1961

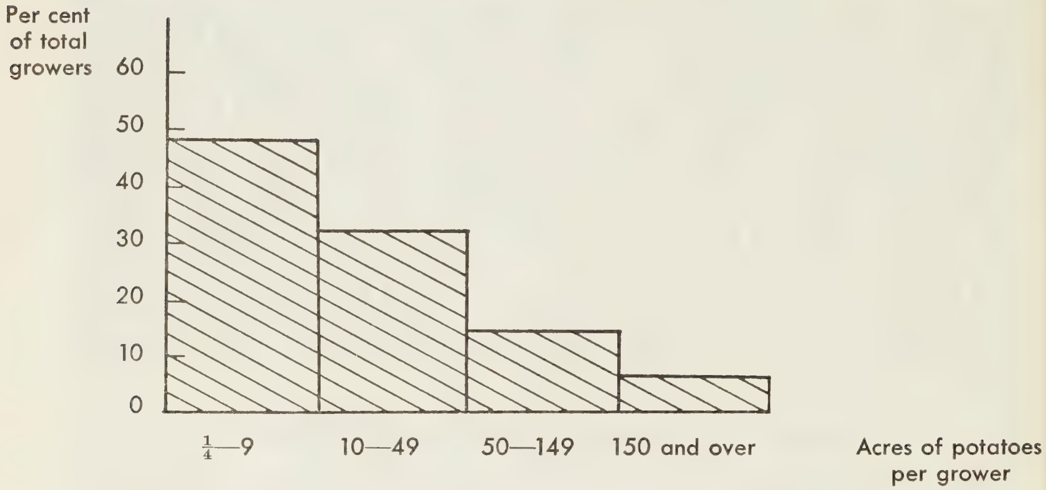
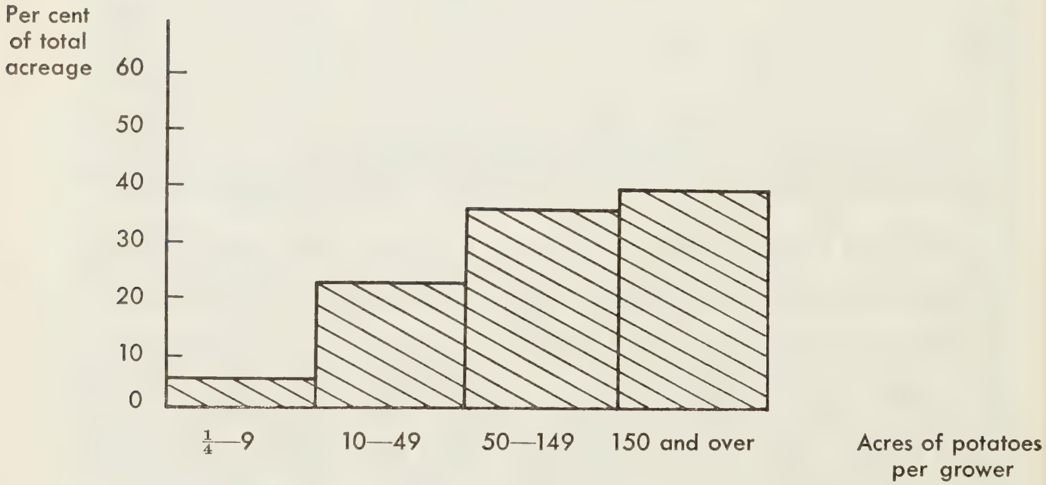


Figure 3.—Percentage of Total Commercial Alberta Potato Acreage in Different Size Units, 1961



Source: Estimated from planting permits, Crop Protection and Pest Control, Alberta Department of Agriculture.

The shift toward oligopoly in the potato industry is being felt among the potato growers. The small growers are still price-takers, but the large growers are discovering that selling actions of another large grower can have an appreciable effect on the price of his own produce or vice versa. The effect of oligopoly on the individual grower or the industry, is of course extremely difficult to ascertain. Many factors must be considered, such as the relation of supply to demand, recognition of interdependence among growers, inter-regional competition, and the cost of producing potatoes.

AVAILABILITY AND USE OF MASS INFORMATION MEDIA IN RURAL ONTARIO

Diana Ferris

A major part of the "Special Study of Ontario Farm Homes and Homemakers"[1] consisted in a review of the use made of the best known communication media, and by homemakers and farm operators, as a means of obtaining information on home and farm work.

Availability of Mass Communication Media in Rural Ontario.—At the time of survey, in the summer of 1959, rural Ontario was highly exposed to mass communication media. Ninety-nine per cent of the 352 households sampled subscribed to a farm newspaper; 98 per cent owned radios; 90 per cent bought newspapers; 83 per cent subscribed to or purchased magazines, and 78 per cent had T.V. sets.

Every farm home surveyed was served by mass communication media (Table 1). Six in ten had all of the five specified media; that is, radio, television, newspapers, magazines and the farm press. Nearly three of ten households had four of these media, and about one in ten had three. No survey home had less than two mass communication media from which homemaking and farming information can be obtained.

Some households having all of the five specified media, were, of course, located throughout the province. However, there was a relatively greater concentration of "five-media" homes in southern Ontario than in other areas. Five-media farms also tended to be characterized by a greater volume of farm business and to have a relatively high material level of living (as measured by a level of living score). In addition homemakers and operators in these homes generally had more than average formal education and proportionately, more farm wives were members of the Women's Institute.

Use Made of Mass Media in Rural Ontario.—In analyzing our survey data, we soon realized that in every household, someone was using some information media and that in many homes both the homemaker and the operator were using all specified media. Dissatisfied with such broadly inclusive results, we attempted to exclude what may be considered as vague or incidental use. The technique devised was that of separating "selective" users from "background" users.

In general the term "selective" was applied to users who identified specific sources of media types of homemaking or farming information found in these media. For example, to be classified as a selective radio listener, a homemaker had to be specific in all her multiple answers relating to the identification of radio stations (or programs) and about the relevant subject matter. If she named a program, but did not know in which way it was helpful, or if she remembered that she had heard something useful but could not recall the station, she was designated as a "background" listener.

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[1] A study conducted in co-operation by the Home Economics and the Farm Economics and Statistics Divisions of the Ontario Department of Agriculture and the Rural Sociology Unit of the Economics Division of the Canada Department of Agriculture.

Despite the redefinition of selective and background use for each medium and despite the classification of users as "selective" and "background" users, for each media, the final analysis still showed that in all but one of the 352 households in the sample, the homemaker and/or the operator "selectively" used one or more information media. The exception was an elderly couple who used all specified media but were planning to retire, at the time of the survey.

Table 1.—Number and Percentage Distribution in 352 Ontario Farm Households of Five (Sight, Sound and Printed) Information Media, Special Study of Ontario Farm Homes and Homemakers, 1959

	Households			
	Number		Per cent	
Households possessing:				
5 Information Sources All specified media (radio, T.V., Farm press, newspapers, and magazines)	215		61	
4 Information Sources	100		28	
All but one media:				
a) all but T.V.		52		15
b) all but magazines		32		9
c) all but newspapers		14		4
d) all but radio		1		*
e) all but farm press		1		*
3 Information Sources	30		9	
a) Radio + farm press + newpsapers (no T.V. or magazines)		12		3
b) Radio + T.V. + farm press (no newspapers or magazines)		9		3
c) Radio + farm press + magazines (no T.V. or newspapers)		5		1
d) T.V. + farm press + magazines (no radio or newspapers)		2		1
e) Radio + newspapers + magazines (no T.V. or farm press)		1		*
f) Newspapers + farm press + magazines (no radio or T.V.)		1		*
2 Information Sources	7		2	
a) Radio + farm press (no T.V. or newspapers or magazines)		5		1
b) Newspapers + farm press (no radio or T.V. or magazines)		1		*
c) Farm press + magazines (no radio or T.V. or newspapers).		1		*
Total	352		100	

Use of media then, even with more clearly defined criteria, still appeared to be almost all-inclusive. However, degree of use, did come somewhat more into focus. To illustrate, only one household used none of their available sources of information, and in only eight households did both the operator and the homemaker each "selectively" use all available media. Besides these two extremes, there were 12 other homes where either the operator or the homemaker, but not both, made use of information media.

The over-all pattern which then emerged, for (331 of the 352 households), simply consisted in operators and homemakers using some but not all available media for homemaking and farming information. The behavior pattern was almost equally divided between the following three types of use: (1) equal use by both operator and homemaker, (2) slightly more use by the operator than the homemaker, and (3) slightly more use by the homemaker than the operator.

Homemakers' and operators' selectivity may be briefly summarized as follows:

Media	Households having media available		Selective homemakers		Selective operators	
	Number	Per cent	Number	Per cent	Number	Per cent
Farm press	350	99	276	78	285	81
Radio	346	98	205	58	242	69
Television	274	78	176	50	163	46
Magazines	293	83	156	44	n.a.	n.a.
Newspapers	316	90	59	17	n.a.	n.a.
"Other" (written) sources			156	44	n.a.	n.a.
"Other" (various) sources			n.a.	n.a.	256	73

n.a.: Indicates that direct comparisons are not possible.

NOTE: Operators were not specifically asked about their use of nonfarm newspapers and magazines; use of "other" means of acquiring helpful farming information involved several different ways, media and sources; use of "other" means of acquiring helpful homemaking information referred only to published booklets, pamphlets, etc. for which the women had sent written requests, e.g., to government or commercial sources.

Homemakers looked most often to the farm press for helpful homemaking information, then to radio, and next to television. Then they either opened a magazine or asked for pamphlets, and least of all, they read newspapers.

Availability and use were directly related as far as the farm press was concerned. Most homes had farm newspapers and most homemakers used the farm press for information. Availability and use had no such close association in regard to newspapers. This medium was least used by farm women but was available in more farm homes than either television sets or magazines.

Over-all operator use of media placed the farm press again at the top of the list. "Other" means ranked second. Most frequently these "other" means were agents of, and publications from, government sources, and personal contacts within the community. Radio was next as a frequent source of useful farming information and television was the least used medium. Details on use of media and its relation to availability of such media are given in Tables 2 and 3.

A general observation which may be made from these two tables is that use and availability are more closely related in households that have the fewer media available. Conversely, with more media available, more choices are made, and use is dispersed rather than concentrated. The tables also reconfirm the expected finding that farm people use the farm press.

Sources and Types of Information Secured

Radio.—The types of radio programs farm homemakers said were helpful, may be ranked in decreasing order of frequency of mention, as: household hint shows, farm shows, and women's shows. Programs such as "The Craigs", "Summer Fallow" and "Farm Forum" are certainly not "traditional" homemaking shows, but, nevertheless, judging by the frequency of response, many farm women consider them as such.

The types of radio programs said to be helpful to farm operators may be classified, in decreasing order of frequency of mention, as follows: farm news, farm market reports, farm commentaries, weather reports, special farm broadcasts, "ag. rep." shows.

Table 2.—Number and Type of Mass Information Media in Households, and Selective Use by Homemakers

Number of specified media in household	Number of homemakers	Type of media used selectively					
		Farm press (FP)	Radio (R)	T.V.	Magazines (M)	Newspapers (N)	"Other"[a] printed matter
			—number of homemakers—				
All households	352	276	205	176	156	59	156
Five media in household	215	154	125	135	124	40	107
Four media in household	100	87	62	34	29	14	37
All except T.V.	52	43	41	0[b]	24	8	23
All except magazines (M)	32	30	16	21	0	5	8
All except newspapers (N)	14	13	5	11	5	0	4
All except radio (R)	1	1	0	1	–[c]	–	1
All except farm press (FP)	1	0	–	1	–	1	1
Three media in household	30	29	13	7	2	4	9
Had FP + R + N	12	12	7	1	0	3	1
Had FP + R + T.V.	9	9	2	5	0	0	5
Had FP + R + M	5	5	4	0	2	0	1
Had FP + T.V. + M	2	2	0	2	–	0	1
Had R + N + M	1	0	–	0	–	1	–
Had FP + N + M	1	1	0	0	–	–	1
Two media in household	7	6	5	0	1	1	3
Had FP + R	5	5	5	0	0	0	1
Had FP + N	1	1	0	0	0	1	1
Had FP + M	1	–	0	0	1	0	1

[a] "Other" printed matter refers to pamphlets, brochures, etc. which had been obtained by the homemakers by written request.

[b] 0—means this medium not used in these households.

[c] –, means this medium in these households but not selectively used.

Table 2a.—Ranking of Selective Use of Available Media by Homemakers

Households having	Farm press	Radio	T.V.	Magazines	"Other"	Newspapers
All 5 media	1	3	2	4	5	6
4 media	1	2	4	5	3	6
3 media	1	2	4	6	3	5
2 media	1	2	n.a.	4–5	3	4–5
All households	1	2	3	4–5	4–5	6

Television.—TV commentary type shows—various women's programs for the homemakers (e.g. "Open House"), special directed farm broadcasts for the operators (e.g. "Country Calendar")—interested operators, and homemakers most of all. Rural homemakers were also interested, but not quite as much, in household hint shows and farm programs; likewise operators were also interested in farm commentator telecasts, reports, general farm news and weather information.

The Press.—Three-quarters of all the farm families surveyed bought one or more farm papers and magazines as well as nonfarm newspapers and magazines. One-fifth received only two of these news media, (most often it was a farm newspaper with either magazines or other newspapers); a few homes took only one type of publication (in all cases, this was a farm newspaper).

Table 3.—Number and Type of Mass Information Media in Households, and Selective Use by Farm Operators

Number of specified media in household	Number of operators	Type of media used selectively			
		Farm press (FP)	Radio (R)	T.V.	"Other"[a]
		—number of operators—			
All households	352	285	242	163	256
Five media in household	215	171	157	136	161
Four media in household	100	82	70	21	65
All except T.V.	52	46	41	0[b]	35
All except magazines (M)	32	25	18	13	21
All except newspapers (N)	14	11	10	7	9
All except radio (R)	1	–[c]	0	1	–
All except farm press (FP)	1	0	1	–	–
Three Media in Household	30	26	13	6	26
Had FP + R + N	12	10	6	0	12
Had FP + R + T.V.	9	9	3	4	6
Had FP + R + M	5	4	3	0	4
Had FP + T.V. + M	2	2	0	2	2
Had R + N + M	1	0	1	0	1
Had FP + N + M	1	1	0	0	1
Two media in households	7	6	2	0	4
Had FP + R	5	5	2	0	3
Had FP + N	1	1	0	0	1
Had FP + M	1	–	0	0	–

[a] "Other" for operators refers to various sources such as governments, personal contacts, farm organizations and associations, commercial companies and manufacturers, and printed mass media.

[b] 0, means this medium not used by these households.

[c] –, means this medium in these households but not selectively used.

Table 3a.—Ranking of Selective Use of Available Media by Operators

Households having	Farm press	"Other"	Radio	T.V.
All 5 media	1	2	3	4
4 media	1	3	2	4
3 media	1–2	1–2	3	4
2 media	1	2	3	n.a.
All households	1	2	3	4

Practically all of the farm women interviewed mentioned one or more of 15 distinct types of helpful homemaking information received from one or more of these press sources. However, most of their answers had to do with just two subjects—textiles and clothing, and nutrition and food.

In general, textile and clothing information was sought more often in the nonfarm press, and food and nutrition topics were most often looked for in agricultural publications, presumably because the nonfarm press publishes more articles on textiles whereas the farm press carries more stories on nutrition.

Other types of helpful homemaking information obtained from press sources were found to be: general homemaking hints, ideas about home furnishings, crafts and hobbies, gardening, home management practices, family relationships, housing, and health. Among other minor subjects of interest to rural women were articles on flower arrangements, grooming, and association and club activities.

The use made of nonfarm newspapers and nonfarm magazines by farm operators was not ascertained. However, data on the farm press as a source of useful farming information was collected.

Others.—A great variety of additional homemaking and farming information was also obtained from other sources. For example, farm housewives in search of more information on food and nutrition would write to governmental and commercial information services for pamphlets, brochures, etc. on these topics; likewise, when farmers wanted more information on crops, breeding and other farming practices.

TWELVE ECONOMIC PRINCIPLES UNDERLYING A NATIONAL DAIRY POLICY

H. J. Mestern

A national dairy policy is so modeled as to serve all people, consumers as well as producers of milk. It must take account of the food requirements of a growing population and help build up a set of conditions that will help channel enough resources into the production of the required milk output. Milk and milk products must be offered to the consumer at prices that will help build up consumer markets while providing return fair returns to producers and processors.

Several factors must be considered in the formulation of a national dairy policy, in addition to demand and supply. We do not presume, in this article, to be able to supply an exhaustive analysis of all relevant factors but simply wish to draw attention to twelve economic principles which have an important bearing on the dairy industry.

The Future Size of the Dairy Industry.—The dairy industry will long remain an important industry in Canadian agriculture, because of its essential contributions to the national diet. Canada is not unique in this respect. Other highly developed nations maintain a dairy industry to supply the domestic requirements of most dairy products, notably fresh fluid milk. The greater the part of total milk sold in the "high price fluid market" is, the better are the total cash returns to farmers, even though production costs are relatively high.

Given the natural disadvantage of a cold climate and high production costs in Canada, purchases of Canadian dairy products in conventional export markets are limited. Unless, therefore, new export outlets can be found in other regions of the world (Africa, the Far East) Canadian dairy production should be kept in line with the potential of the Canadian domestic market. *(1st principle).*

In the past decade, the production potential has outgrown the demand for dairy products in the domestic market. Each year, a large quantity of milk products has had to be laid up as stocks, by the government in an attempt to stabilize producer prices and farm income.

Why We Have a Milk Surplus.—There are two important economic reasons for over-expansion in production capacity. One is the relative stability of the dairy farm enterprise, which offers milk producers a steady source of cash income *(2nd principle).* The other is the "fixedness" of capital investments in the dairy enterprise. This principle suggests that the higher the degree of specialization and investment in specialized dairy equipment is, the lower is its value for alternative use. If the earning power of such capital investments, falls below its salvage value, (through lower producer prices or underutilization), then resources would have to shift out of dairying. The relative stability of income from dairying causes a strong tendency to overcommit resources in dairying. The result is a rapid expansion of capacity even with small price increases (or stable prices), but an extremely slow response, even to substantial reductions in price. *(3rd principle).*

The third principle relates mainly to the larger fluid and manufacturing milk producers which market the bulk of our whole milk.

What Milk is in Surplus Supply?—Milk from larger producers with sanitary equipment tends to be top quality milk and this milk is not in surplus supply *(4th principle).*

It is conceivable that a rigid enforcement of existing sanitary and quality standards would ban from commercial use, a large proportion of the milk, which is not produced under sanitary conditions.

Based on quality criteria, the true surplus milk consists of the low quality and unsanitary milk and cream which come largely from small manufacturing milk producers and notably from cream producers.

Like the larger producers, the small producers are not likely to respond to lower prices but for a different reason. Their less specialized dairy operation is usually a complementary enterprise which is less sensitive to fluctuations in returns because milk or cream are produced a means of employing labor and other farm resources that have little or no alternative or investment value. However, even the etlimination of most of the small producers will not reduce supplies in the long run, because of the tremendous production potential inherent in the dairy cow—combined with more intensive management, feeding techniques and technological advance. *(5th principle).*

To maintain the income from dairying on small farms it is therefore better to make direct transfer payments or pay a deficiency payment on a limited quantity of milk per farm rather than encourage the expansion of output as a means of securing additional income. Because of the relative low output per farm, the large number of small dairy farmers receive only a small proportion of the total of a subsidy which is paid on the unit of output. *(6th principle).* The remaining larger producers could easily raise their output to meet any additional demand for milk and secure a sufficient income owing to the cost economies and efficiencies in resource utilization which can be realized with herds up to 75 cows, under present conditions. *(7th principle).*

Short-run "Remedies" to Surplus Supplies.—Amongst the means for immediate short run remedy of the surplus situation are "pools" and "marketing plans".

Pools help to equalize returns to producers but normally result in higher average prices to most producers, and higher prices are followed by larger outputs for the reasons previously explained. Pools, therefore, serve the purpose of income maintenance but do not tackle surplus supplies unless they are integrated with stringent quota arrangements. Only smaller supplies justify higher average returns.

As long as surplus milk can be marketed as butter and sold to the government, pools do not offer any relief as far as the federal government is concerned, although they do serve provincial expediencies.

Marketing plans and pools tend to centralize supplies in the market place and thus increase the bargaining power of farm producers as a group. This has generally a beneficial effect on farm income.

However, to be equitable, the marketing plan should be national in scope and should properly be based on a price level which is the result of the interaction of demand and supply and not on an artificially high government support price. *(8th principle).*

Processing and Distribution.—The processing and distribution industry appears to suffer from some structural rigidity and a lack of incentives, for processors, to search for new products and new or larger markets. New dairy products would be helpful to the dairy industry as long as they have a high butterfat content. *(9th principle).*

Over-capacity in the processing industry is now attracting additional milk from farm producers through special cash premiums to farmers, which adds to the surplus problem. Any policy which does not encourage processors to consolidate this capacity will indirectly encourage excess milk supplies. The consolidation of excess processing capacity should lower costs and result in at least relatively stable margins and either lower prices to consumers or higher returns to producers or some benefit to both. *(10th principle).*

Demand Expansion for Milk?—In the past decade the total per capita consumption of milk has not increased (on a fat basis). If this trend continues, most of the additional milk consumption will come from population growth.

Evidence in many industrialized countries supports the concept that consumer demand for fluid milk and butter is relatively inelastic. In other words, prices can be allowed to increase without great losses of sales, but sales will not greatly increase when prices are lowered.

Since butter and fluid milk together account for about 80 per cent of all commercial milk, any improvement or loss of demand for these products will materially affect the whole dairy industry.

The demand schedules are effected by dietary changes which make new types of food fashionable.

The availability of such substitute products as margarine and low fat milk would tend to make the demand for butter and fluid milk somewhat more elastic *(11th principle).* On the basis of this assumption it seems likely that price reductions would greatly increase consumption.

But next to price, promotion has become a very important factor in sales increases. Ice cream and cheese, particularly process cheese, offer good examples of what can be achieved if retail prices are free and merchandisers are interested in building volume. However, these two products now account for only 20 per cent of the commercial milk.

Low-price-measures to increase consumption such as government programs for school milk and food stamps are justifiable more with respect to public health and not so much as income assistance to dairy farmers *(12th principle).* Such programs do increase the aggregate consumption only to the extent that they reach persons who were not formerly in the market. In other words such programs have to supply additional food, not substitution.

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The State of Food and Agriculture. FAO. Rome. 1962. pp. IX + 198.

The 1962 issue of *"The State of Food and Agriculture"* draws attention to the very slight increase in world agricultural production and the consequent reduction in production per caput as a result of an estimated 1.8 per cent increase in population. The over-all level of stocks of agricultural commodities was also reduced in 1961-62, for the first time since 1957-58.

The three chapters of the report, other than the Summary chapter, deal with the world economic situation and outlook, the role of forest industries in the attack on economic underdevelopment and the livestock industry in less developed countries.

B

THE ECONOMIC ANNALIST

FEBRUARY 1963

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DEPARTMENT OF AGRICULTURE
OTTAWA, CANADA

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS
ADMINISTRATION BRANCH, ECONOMICS DIVISION,
DEPARTMENT OF AGRICULTURE, OTTAWA

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ECONOMICS DIVISION

A. H. TURNER, Director

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Year and Month	General Wholesale Price	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Price		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39=100						1949=100		
1926..........	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927..........	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928..........	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929..........	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930..........	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931..........	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932..........	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933..........	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934..........	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935..........	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936..........	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937..........	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938..........	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939..........	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940..........	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941..........	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942..........	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943..........	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944..........	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945..........	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946..........	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947..........	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948..........	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949..........	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950..........	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951..........	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952..........	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953..........	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954..........	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955..........	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956..........	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957..........	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958..........	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959..........	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960..........	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961..........	233.3	225.5	181.0	270.0	253.8	282.2	226.7	129.2	124.0	173.1
1961										
Jan..........	231.7	233.2	189.3	277.1	261.3	273.0	223.5	129.2	124.4	165.8
Feb..........	232.1	232.7	189.0	276.3	262.1	....	....	128.9	124.0	166.7
Mar..........	231.3	228.4	188.2	268.6	259.8	....	....	129.1	124.0	166.0
April..........	230.9	225.1	188.5	261.7	255.6	284.7	226.6	129.1	123.9	169.2
May..........	231.2	225.8	187.3	264.4	254.5	....	....	129.0	123.2	169.4
June..........	231.4	228.6	192.5	264.7	256.9	....	....	129.0	123.5	173.3
July..........	234.5	228.3	191.3	265.3	256.9	....	....	129.0	124.9	173.4
Aug..........	234.5	218.6	171.9	265.4	246.1	289.0	230.0	129.1	125.3	176.4
Sept..........	235.3	220.7	169.1	272.3	248.8	....	....	129.1	123.2	178.1
Oct..........	235.3	221.8	168.3	275.3	247.4	....	....	129.2	123.3	177.9
Nov..........	235.3	221.1	167.2	275.0	247.3	....	....	129.7	123.6	180.1
Dec..........	236.5	221.5	168.8	274.2	248.4	....	....	129.8	124.5	180.5
1962										
Jan..........	237.0	220.4	168.8	271.0	248.7	281.8	233.6	129.7	124.8	179.8
Feb..........	237.2	220.7	170.6	270.8	247.7	....	....	129.8	125.0	182.5
Mar..........	237.1	218.8	170.2	267.5	247.7	....	....	129.7	124.4	184.3
April..........	237.4	220.7	168.4	272.0	248.1	291.6	235.8	130.3	125.8	184.1
May..........	239.1	224.2	171.9	276.5	249.9	....	....	130.1	124.5	186.0
June..........	240.3	230.4	175.0	285.8	254.8	....	....	130.5	125.6	186.6
July..........	241.3	236.7	177.7	295.6	259.8	....	....	131.0	127.0	186.3
August..........	242.5	238.0	171.6	304.3	262.3	294.2	236.0	131.4	128.4	189.2
Sept..........	241.8	231.8	165.8	297.8	257.2	....	....	131.0	126.8	189.2
Oct..........	241.6	232.1	165.9	298.2	255.7	....	....	131.5	127.2	189.3
Nov..........	242.3	232.7	165.1	300.3	254.4	....	....	131.9	127.7	....
Dec..........	242.4	230.0	167.3	292.8	253.3	....	....	131.9	127.8	....
1963										
Jan..........	242.9	227.0	170.7	283.3	......	....	....	132.0	129.0	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1961 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Gross National Product.—Canada's G.N.P. continued to advance in the third quarter of 1962 and reached a seasonally-adjusted level, at annual rates, of $40,256 million. The rate of increase was 1.7 per cent higher than in the second quarter but a large part of this increase represented higher prices and the rise in the volume of production itself was only one per cent.

The accumulation of business inventories was the chief cause of the rise in the general level of economic activity. Investment in these inventories, at seasonally-adjusted annual rates, rose from only $60 million in the second quarter to over $700 million in the third quarter. Added stimulus came from business gross fixed capital formation. Exports of goods and services dropped a little from the high level in the second quarter; imports declined more than exports so that, on balance, the external sector made a small contribution to the level of economic activity.

The gross national product, in the first three quarters of 1962 was 8.8 per cent above the level for the corresponding period of 1961. All components of gross national product and expenditure increased significantly; the crop estimate was very much higher than the poor crop of 1961.

Gross national expenditure, in millions of dollars, at seasonally adjusted annual rates, in the third and second quarters of 1962 was as follows:

	Third quarter	*Second quarter*
Personal expenditure	25,544	25,420
Government expenditure	7,692	7,904
Business gross capital formation	6,968	6,868
Residential construction	1,592	1,536
Non-residential construction	2,696	2,760
Machinery and equipment	2,680	2,572
Business inventories	716	60
Farm inventories	88	24
Exports	8,212	8,320
Imports	−9,128	−9,268
Residual error of estimate	164	240
G.N.E. at market prices	40,256	39,568

Exports.—Canada's exports totaled $603.5 million in November 1962, an increase of 11.4 per cent from the $541.6 million total for November 1961. Exports in the January-November period totaled $5,843.2 million in 1962, which represents an increase of 8.9 per cent from the $5,364.2 million total in the corresponding period of 1961. Part of the increase is attributable to the change in the foreign exchange value of the dollar.

Total exports to various countries, in millions of dollars, were as follows:

	November		*January-November*	
	1962	*1961*	*1962*	*1961*
United Kingdom	92.2	76.5	840.7	833.8
Other Commonwealth and preferential countries	35.0	29.2	306.5	302.5
United States	322.6	308.0	3,465.7	2,943.4
All others	153.7	127.8	1,230.3	1,284.5
Total	603.5	541.6	5,843.2	5,364.2

Wholesale Prices.—The general index of wholesale prices (1935-39=100) rose to 242.3 in November 1962 from 241.6 in October and 235.3 in November 1961.

The vegetable products group index rose to 213.3 in November from 210.1 in October, chiefly as a result of higher prices for livestock and poultry feeds, sugar and its products, rubber and its products, grains, and bakery products.

Consumer Prices.—Canada's consumer price index (1949=100) stood at 131.9 in November and December 1962 and at 129.8 in December 1961. The index averaged 130.7 for the year 1962 and 129.2 for 1961.

Oats, Barley, Rye, and Flaxseed.—Total exports of oats, barley, rye, and flaxseed totaled 8.3 million bushels in the first quarter of the 1962-63 crop year, compared with an August-October 1961-62 total of 17.0 million bushels, and an average of 29.5 million bushels for the 1951-60 ten-year period. Exports of the four grains, up to October 31, 1962, with corresponding year-earlier figures and the ten-year August-October averages, respectively, in brackets, were as follows, in millions of bushels: oats, 0.9 (0.2, 7.6); barley, 1.6 (13.1, 18.7); rye, 2.7 (1.2, 1.5); and flaxseed, 3.1 (2.5, 1.7).

Dairy Factory Production.—Larger quantities of cheddar cheese, ice cream mix, and evaporated whole milk but smaller quantities of creamery butter and skim milk powder were produced in December 1962 than in December 1961. Output in the full year 1962 was larger than in 1961 for creamery butter and ice cream mix, and smaller for cheddar cheese, evaporated whole milk and skim milk powder.

December production totals, in millions of pounds (gallons for ice cream mix) and with figures for 1961 in brackets, were as follows: creamery butter, 16.7 (17.0); cheddar cheese, 6.2 (5.5); ice cream mix, 1.2 (1.2); evaporated whole milk, 14.3 (13.0); and skim milk powder, 9.7 (10.0).

Output for the year, also in million pounds (gallons for ice cream mix) and with figures for 1961 in brackets, was as follows: creamery butter, 360.7 (351.6); cheddar cheese, 115.5 (117.9): ice cream mix, 21.6 (21.4); evaporated whole milk, 286.0 (322.0); and skim milk powder, 190.4 (213.0).

Milk.—The November 1962 milk output is estimated at 1.3 billion pounds, which represents a decrease of three per cent from November 1961. Output in the January-November period is estimated at 18 million pounds and is only 0.1 per cent higher than in the corresponding period of 1961.

Sales of fluid milk and cream, in milk equivalent, totaled 507.1 million pounds in October 1962 and were three per cent higher than in October 1961. Sales in the January-October period totaled 4,935.1 million pounds and were two per cent higher than in the corresponding period of 1961.

Hogs.—Hogs on farms in Canada (Newfoundland excluded) totaled 4,993,000 at December 1, 1962 compared with 5,135,500 a year earlier; a 15.5 per cent increase in eastern Canada was more than offset by a 22.6 per cent decrease in western Canada. The fall pig crop (pigs saved from litters born during the six-month period ended November 30) totaled 3,841,000, a 0.9 per cent rise from a year earlier. Farmers' plans, as reported in the December 1962 survey, indicate that about 540,400 sows are expected to farrow for the 1963 spring pig crop, which would represent an eight per cent increase over the 449,600 sows farrowed in the 1962 December-May period.

CORRECTION

In Table 2, page 130 of the December 1962 issue, under *Low fat milk,* in the third line from the bottom, please insert—5.9.

FREEDOM-FROM-HUNGER CAMPAIGN

H. L. TRUEMAN

On July 1, 1960, the Food and Agriculture Organization of the United Nations launched a five-year effort to mobilize world resources for the acceleration of existing programs of production in food-deficient countries. The Campaign will provide financial and technical assistance for the support of self-help projects designed to remove the causes of hunger and malnutrition in those nations where present government financing and services cannot cope with the increasing problems. This effort forms a major part of the Decade of Development plans of the United Nations Organization.

Getting a world-wide voluntary movement of this kind under way has been a difficult task and progress has been slower than was expected. Now the Campaign is gaining momentum; it has won the interest of leaders and organizations in many of the affluent nations, press and radio are interested and money is beginning to flow in for the support of projects. There are now over 40 National Freedom-from-Hunger Committees. The Canadian Committee was organized in March 1961 and is now committed to over half a million dollars worth of projects; over $200,000 have already been raised by the 50 co-operating organizations making up the Committee. Details are available from the Secretariat, Canadian Freedom-from-Hunger Committee, Box 2040, Ottawa, Canada.

The world-wide Campaign reaches its mid-point in 1963 with the observance of Freedom-from-Hunger week, March 17 to 23, and the World Food Congress in Washington, D.C., June 4 to 18. The Canadian Freedom-from-Hunger Committee is organizing its own second annual meeting and a two-day National Food Conference in Ottawa during the Freedom-from-Hunger week next March. At the same time many of the Member organizations are making special plans for the observance of this week in connection with their own fund-raising activities.

THE SOURCE OF CANADIAN AGRICULTURAL EXPORTS BY REGIONS, 1960

A. W. OUGHTRED

Knowledge concerning the sources of agricultural exports is helpful in indicating to farmers, in the various regions of Canada, their stake in the export of agricultural products. It can also be useful in assessing the impact of changes in world agricultural trade patterns on a particular region of Canada.

In Canada, we have statistical information on the volume and value of agricultural exports according to destination[1] but we lack information on the domestic sources of these exports. This article attempts to add to available information by outlining the contributions of the four main regions of Canada to 20 classes of agricultural exports (Table 1). The four regions are 1) British Columbia, 2) the Prairie Provinces, 3) Ontario-Quebec, and 4) the Atlantic Provinces. The definition of what constitutes an agricultural export is that used by the Economics Division in its annual report on *Trade in Agricultural Products with the United Kingdom, the United States and All Countries.*[2] The Economics Division's list includes raw and semi-processed products but excludes such highly processed products as leather and whisky. Each export item was considered individually but the statistical table shows only the class aggregates.

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[1] Monthly reports on Trade in Canada, Exports by Commodities, published by the External Trade Division of the Dominion Bureau of Statistics.

[2] The two classes "Sugar" and "Plantation Crop" were dropped from the test because these classes consist essentially of re-exports.

We used four different methods to determine the source of Canadian agricultural exports.

1. In some cases statistical data on sources of exports were available. For example, exports of fresh apples by province of origin were obtained from the *Crop and Seasonal Price Summaries* prepared by the Markets Information Section of the Canada Department of Agriculture.

2. In some cases statistical data on sources of exports were not available and we had recourse to the judgment and knowledge of the commodity specialists within the Department of Agriculture. One example is the exports of hams and shoulders, cured, n.o.p. Half of these exports were adjudged to originate in the Prairie Region and the other half in Ontario-Quebec.

3. In a few cases exports were assigned to a region on the basis of production. If a region produced ten per cent of an agricultural commodity it was given a ten per cent share in the exports of that commodity. The sources of red clover seed exports were determined in this way.

4. When a commodity was grown in one region and processed in another, exports were assigned to the region producing the primary product. An example is wheat flour, which was apportioned on the basis of where the wheat was grown rather than on the basis of where it was milled.

Table 1.—Regional Sources of Canadian Agricultural Exports, 1960

Commodity	British Columbia		Prairie provinces		Ontario-Quebec		Atlantic provinces		Canada	
	million dollars	per cent	million dollars	per cent	million dollars	per cent	million dollars	per cent	million dollars	per cent
Grains	0	0	462.2	99.7	1.4	0.3	—	—	463.6	100
Grain products	—	—	78.3	100	0	0	—	—	78.3	100
Millfeeds and fodder	—	—	11.2	85	1.7	13	0.3	2	13.2	100
Oilseeds	0	0	62.8	92	5.5	8	—	—	68.3	100
Oilseed products	—	—	1.8	10	15.7	90	—	—	17.5	100
Live animals	2.0	5	25.9	65	11.9	30	0	0	39.8	100
Meats	0	0	37.7	85	6.6	15	0	0	44.3	100
Other animal products[a]	0	0	40.3	72	15.7	28	0	0	56.0	100
Dairy products	0.3	1	0.2	1	25.8	98	0	0	26.3	100
Poultry and eggs	0	0	1.0	25	3.0	75	0	0	4.0	100
Fruits and nuts	8.2	60	0	0	2.0	15	3.4	25	13.6	100
Vegetables	0.4	4	0	0	9.8	91	0.5	5	10.7	100
Potatoes	0.2	3	0.1	1	0.1	1	5.0	95	5.4	100
Seeds for sowing[b]	0.4	2	17.7	88	2.0	10	0	0	20.1	100
Maple products	—	—	—	—	5.2	92	0.4	8	5.6	100
Honey and bees	0	6	0.2	58	0.1	35	0	1	0.4	100
Hops	0.1	100	—	—	—	—	—	—	0.1	100
Tobacco	—	—	—	—	25.3	100	0	0	25.3	100
Other vegetable products[c]	4.5	30	0.7	5	8.2	55	1.5	10	14.9	100
Vegetable fibres	—	—	0	100	—	—	—	—	0	100
Total	**16.1**	**1.8**	**740.1**	**81.6**	**140.0**	**15.4**	**11.1**	**1.2**	**907.4**	**100**

Note: 0 indicates less than 0.05 million dollars. In the percentage column 0 means less than 0.5 per cent. Values may not add up, because of rounding. The — means no exports.

[a] Includes such items as hides, skins, sausage casings, wool in the grease, etc.

[b] Includes forage crop seeds and cereal crop seeds.

[c] Includes such items as peat moss, laundry starch, molasses, food flavoring and coloring, spices, etc.

Regional Characteristics

The Prairie Region accounted for about 82 per cent of the value of all Canadian agricultural commodities exported in 1960. The Ontario-Quebec Region was the source of about 15 per cent, British Columbia about two per cent and the Atlantic Provinces about one per cent.

The Prairie Region's main exports were, of course, grain and grain products. However, when these two classes of products were removed from the list the Prairie Region still accounted for about 55 per cent of total agricultural exports. The Prairie Region was predominant as an exporter of millfeeds and fodder (exporting 85 per cent of the Canadian total), oilseeds (92 per cent), live animals (65 per cent), meats (85 per cent), other animal products (72 per cent), and seeds for sowing (88 per cent).

The Ontario-Quebec Region was predominant in the export of dairy products (98 per cent), oilseed products (90 per cent), tobacco (100 per cent), vegetables (91 per cent), other vegetable products (55 per cent), and maple products (92 per cent).

British Columbia led the way in exports of fruits and nuts (60 per cent) and had a large share in exports of vegetable products (30 per cent).

The Atlantic Region was by far the largest exporter of potatoes (95 per cent) and had a large share in the export of fruits and nuts (25 per cent).

Sources of Certain Classes of Exports

Oilseeds and Oilseed Products.—Most of the oilseed exports come from the Prairie Region but the larger part of the exports of oilseed products comes from Ontario, where soybeans are crushed.

Live Animals.—Feeder cattle exported from the Prairie Region to the United States was a large item. Cattle exported from the Ontario-Quebec Region were mainly purebred and grade dairy animals.

Meats.—The Prairie Region exported mainly pork and fresh beef. The Ontario-Quebec Region exported mainly processed meats.

Dairy Products.—The Ontario-Quebec Region exported a large volume of Cheddar cheese. In 1960, the value of the whole milk powder exported by these two provinces exceeded the value of the Cheddar cheese, but a large part of the whole milk powder was donated for international relief purposes.

Poultry and Eggs.—Fresh eggs were the largest export item in this class, two-thirds originating in Ontario-Quebec and one-third in the Prairie Region. Ontario-Quebec exported sizeable amounts of dried and frozen eggs. Very little poultry meat moved into export and that which did, came mainly from the Prairie Region.

Fruits and Nuts.—About 80 per cent of the fresh apples were exported from British Columbia, about 14 per cent from the Atlantic Provinces and about six per cent from Ontario-Quebec. Blueberries were an important item, about 60 per cent of which originated in the Atlantic Provinces, about 30 per cent in Ontario-Quebec and about 10 per cent in British Columbia.

Vegetables.—Vegetable soups, processed in Ontario-Quebec, were a large export item in this class. About four-fifths of the turnip exports originated in Ontario-Quebec and about one-fifth in the Atlantic Provinces. Onions, grown in Ontario, also made up a large part of the vegetable exports.

Potatoes.—Potatoes were exported mainly from Prince Edward Island and New Brunswick, these two provinces sharing about equally most of the export market.

Seeds for Sowing.—Wheat seed, oats seed, bromegrass seed and red clover seed were the large export items and came mainly from the Prairie Region.

Maple Products.—The larger part of the exports of maple products originated in Ontario-Quebec. However, a small amount of maple sugar was exported from the Atlantic Provinces.

Tobacco.—The tobacco exported was mainly of the flue-cured type, most of which was grown in Ontario-Quebec.

Other Vegetable Products.—An important item in this class was peat moss, about half of the exports originating in British Columbia. The remaining export items came mainly from Ontario-Quebec.

The Prairie Region has the largest share in the exports of Canadian agricultural products and is, therefore, the region most likely to be affected by changes in world agricultural trade patterns. However, Ontario-Quebec has a large share and this region is not immune to change nor are British Columbia and the Atlantic Provinces with their smaller shares. It is to be remembered that these conclusions are based on regional statistics. The individual producer in each region has an important personal stake in the export of Canadian agricultural products.

HOW MUCH FARM CREDIT IN CANADA?

R. S. RUST

Over the last thirty years estimates of the amount of farm credit outstanding in Canada have been made from time to time by several agricultural economists. A review of these reports reveals that there has always been a scarcity of reliable data on which to base estimates. Typical of some of the reports is the statement made by S. C. Hudson in 1954 that . . . "one of the characteristics of the farm credit market is the scarcity of reliable statistical information to use as a basis of its description".[1] Several factors have contributed to this lack of statistical data, some of which are: (1) the reluctance on the part of farmers to discuss their debts; .2) the reluctance on the part of companies who sell products to farmers to discuss the amount of farm credit they usually extend each year; (3) the lack of adequate means of yearly reporting the extent of private individual loans to farmers; (4) accounting systems of credit institutions which are not set up so that farm credit accounts can be separately tabulated; (5) a lack of adequate investigation by economists to find out what information can be obtained by constant searching for it and (6) the lack of understanding on the part of many people concerning why adequate statistical data on farm credit are essential to the development of an adequate supply of farm credit at reasonable cost.

While there is still a scarcity of reliable data on farm credit, many of the worst gaps in the data are being gradually filled in. In some cases, these gaps are now filled by accurate statistics and in others by approximations based on local estimates or on survey data. There are still, however, numerous sources of farm credit that require further investigation. With time and diligent work on the part of researchers, the credit extended by these sources can be more adequately described.

The purpose of this article is to demonstrate, through the use of various statistical findings on agricultural credit, where further research needs to be concentrated if greater accuracy in accounting for all the types and amounts of credit which Canadian farmers use is to be achieved.

Yearly estimates on farm credit will be presented for the years 1951, 1955, 1958 and 1961. The estimates for 1951 and 1955 are those found in the Report of the Royal Commission on Canada's Economic Prospects and are shown in Table 1.

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[1] Hudson, S. C. Financing Farming in Canada. In The Economic Annalist, Vol. XXIV, No. 3, June 1954, p. 53.

Table 1.—Farm Credit Outstanding in Canada for the Years 1951 and 1955[a]

Source of credit	Length of term	Amount of credit outstanding 1951	Amount of credit outstanding 1955
		(millions of dollars)	
Veterans' Land Act	L T[b]	191.7	229.7
Canadian Farm Loan Board	L T	28.5	40.3
Provincial loans	L T	82.3	128.7
Insurance, trust and loans cos	L T	36.5	31.3
Private individuals[c]	L T	281.4	357.9
Banks (Farm Improvement Loans)	I T[d]	102.7	133.2
Banks (other than F.I.L.)[e]	S T	175.2	232.9
Credit Unions[f]	S T	44.0	72.0
Merchant credit and real estate tax arrears[g]	S T	88.0	116.0
Total		**1,030.3**	**1,342.4**

[a] Royal Commission On Canada's Economic Prospects. Progress and Prospects of Canadian Agriculture. Ottawa, Queen's Printer, 1959, pp. 122–128.

[b] Long term credit.

[c] Based on statement in 1951 census information which indicated that about 45.4 per cent of all farm mortgages and agreements for sale were held by individuals.

[d] Intermediate term loans, period not defined.

[e] Short-term loans, period from a few months to slightly over a year. Data obtained from quarterly classification of outstanding bank loans.

[f] Estimate based on total credit union loans and the per cent of all credit unions that were classified as rural credit unions. Total current loans in 1951 amounted to $125.1 million and rural credit unions represented 52 per cent of the total number of credit unions. It is assumed that in making these estimates about 68 per cent of all rural credit union loans were considered as agricultural.

[g] Estimate arrived at by taking 50 per cent of all bank loans outstanding at year-end as an estimate of merchant and municipal short-term credit.

The Dominion Bureau of Statistics' Farm Income and Expenditure Survey of 1958 supplied additional data on farm indebtedness. The major findings of this report on farm credit are shown in Table 2.

The most recent estimates on farm credit have been compiled by the Economics Division, Canada Department of Agriculture. These estimates are shown in Table 3 and include statistical data from three sources (1) direct correspondence with representatives of governments; life insurance, trust and loan companies; railway and land companies; banks, credit unions, etc. (2)

Table 2.—Source, and Amount of Farm Indebtedness 1958[a]

Source of indebtedness	Amount in millions of dollars	Per cent of total
Mortgage indebtedness		
Federal, provincial and municipal governments	236.5	23.4
Private individuals	315.3	31.3
Loan, trust, insurance, railway and other organizations[b]	72.2	7.1
Non-mortgage indebtedness		
Banks (Farm Improvement Loans)[c]	131.2	13.0
Banks (other than F.I.L.)	124.0	12.2
Credit Unions	21.0	2.1
Provincial governments	21.4	2.1
Private individuals	53.0	5.2
Insurance, financial and other companies	14.1	1.4
Stores, dealers, etc	23.8	2.4
Total farm indebtedness at December 31, 1958	**1,012.5**	**100.0**

[a] Dominion Bureau of Statistics. *1958* Farm Survey Report *No. 1*, Expenditures, Receipts and Farm Capital. Ottawa, Queen's Printer, 1962, Table 5, p. 24.

[b] As said in footnote to Table 5 of The Survey Report, $15.7 million were deleted from this entry and added to Farm Improvement loans entry.

[c] Actual loans were $139.1 million in 1958.

Table 3.—Farm Credit Extended and Outstanding, 1961

Source of credit	Amount of credit extended, 1961	Amount of credit outstanding, 1961	Per cent of total out-standing	Estimated average interest rate
	— millions of dollars —			
Long term				
Provincial governments[a]	38.1	182.7	10.1	3.1
Federal government[b]	89.0	305.5	17.0	4.9
Life insurance, loan and trust companies[c]	4.9	20.0	1.1	7.8
Private individuals	31.5	315.3[d]	17.5	5.0
Railway and land companies[e]	0.0	1.8	0.0	6.0
Provincial Treasury Branches (Alberta)[i]	1.9	1.0	0.0	5.5
Intermediate term				
Banks (Farm Improvement loans)	108.1	193.8	10.8	5.0
Credit Unions[f]	5.0	15.0	0.8	9.0
Private individuals	20.0	50.0[g]	2.8	5.0
Short term				
Banks (other than F.I.L.A.)	345.0[h]	290.7	16.1	6.0
Provincial Treasury Branches (Alberta)[i]	9.5	6.3	0.3	6.0
Credit Unions[j]	64.9	60.4	3.4	9.0
Private individuals	3.0	3.0[k]	0.2	5.0
Storekeepers, dealers, etc	23.8	23.8[l]	1.3	N.A.[t]
Feed companies[m]	125.0[n]	52.0[n]	2.9	N.A.
Machinery companies[m]	235.0	235.0[o]	13.0	N.A.
Fertilizer companies[m]	43.5	10.9[p]	0.6	N.A.
Agricultural chemical companies[m]	14.0	3.6[q]	0.2	N.A.
Oil companies[m]	30.0	3.0[r]	0.2	N.A.
Companies providing credit for farm improvement purchases[m]	60.0	30.0[s]	1.7	N.A.
Total estimated credit	**1,250.3**	**1,802.5**		

[a] Based on estimates received from seven provinces and on estimates based on the amounts reported for 1960 in the other three provinces.

[b] Estimate based on the annual report of the Farm Credit Corporation and estimates made by V.L.A. officials.

[c] Represents about 98 per cent of all life insurance loan and trust companies that make mortgage loans.

[d] Dominion Bureau of Statistics. 1958 Farm Survey Report. Credit extended was estimated from credit outstanding.

[e] Represents two major companies previously active in land sales.

[f] Breakdown of the amount of mortgage loans were not estimated by all provinces. Mortgage loans exceed $12 million in one province.

[g] Dominion Bureau of Statistics. 1958 Farm Survey Report. This report indicated $53 million in non-mortgage credit outstanding. Here $3 million have been arbitrarily listed as short-term and $50 million as intermediate term credit. Credit extended estimated from credit outstanding.

[h] Estimate based on the average of the 1961 quarterly reports on amounts outstanding and on the assumption that an average farm loan is for nine months.

[i] Data received from Province of Alberta Treasury Branches, Edmonton, Alberta.

[j] The total estimated credit unions loans of $69.9 million is thought to be fairly accurate. Over $42 million of the total represents fairly accurately recorded data received from three provinces. Except in one province, no information was available on loans outstanding. The amount shown for loans outstanding was estimated by assuming that the amount of loans outstanding equals loans extended except where other information was available. It is therefore possible that the loans outstanding are overestimated. However since there is a strong possibility that credit union mortgage loans outstanding are too low, the one probably offsets the other. The total estimates shown are based on eight individual estimates by provincial authorities and two estimates amounting to about $13 million from other information.

[k] Dominion Bureau of Statistics. 1958 Farm Survey Report. See footnote g.

[l] Dominion Bureau of Statistics. 1958 Farm Survey Report.

[m] Amounts shown as credit extended under these headings are as reported in a mimeographed report printed by the Farm Economics and Statistics Branch of the Ontario Department of Agriculture dated July 13, 1962. (The total of $507.5 million attributed as farm credit extended by these companies is viewed by the head office of one of the commercial banks as "being reasonably reliable".)

[n] Amounts outstanding for entries with footnotes n, o, p, q, r and s were estimated by the Economics Division, Canada Department of Agriculture on the basis of the probable average length of term reported by some companies. The $125 million here mentioned does not include feed sold under contract agreement. The $52 million was estimated by assuming the average length of term was 2.5 months.

[o] Credit is extended in some cases up to a three year period. The average is here assumed to be one year.

[p] and [q] In making these estimates it was assumed that the average credit period was three months.

[r] The average credit period of one of the major companies decreased from 75 days in 1952, to 60 days in 1955 and to 46 days in 1959. It was estimated here that the average for 1961 was about 37 days.

[s] A great variety of purchases are included in this item. Since the total purchases are likely to be relatively constant compared to other purchases, the amount outstanding was assumed to be approximately half of the amount extended per year.

[t] No detailed information was available on these items. However, interest charges are often incorporated in selling price or discounts are paid for cash payments.

data on private individual credit and merchant credit from the 1958 Dominion Bureau of Statistics' Farm Survey Report and (3) data on farm credit from a report by representatives of the Ontario Department of Agriculture; these data included estimates, made by the major machine, feed, oil and other companies who extend credit to farmers, on the total yearly credit supplied to farmers.

In Table 3, the estimated amount of farm credit extended during 1961 is shown as $1,250.3 million and the amount of farm credit outstanding as $1,802.5 million. A large portion of these amounts is attributable to the $507.5 million of farm credit extended by companies and to the $234.5 million attributed to the credit outstanding on the farm accounts of these companies. Present evidence indicates that the $507.5 million figure is fairly reliable; however, the $234.5 million figure is less reliable because of the lack of detailed information on the average length of company credit and, also, because of the seasonality of this type of credit. Providing that steps are taken to prevent the identification of individual company operations it now appears that a great deal more information on such credit can be obtained.

Assuming that individual mortgage loans bear interest at the rate of 5 per cent and that credit union loans bear an average interest rate of 9 per cent, the amount of farm credit on which interest charges can be estimated is about $699.3 million on credit extended in 1961 and about $1,392.3 million on credit outstanding at the end of 1961. The weighted average interest rate (insofar as it is possible to calculate), was estimated at 5.8 per cent on the $699.3 million of credit extended and 6.2 per cent on the $1,392.3 million outstanding. The estimated interest cost on this amount of outstanding credit was therefore $86.3 million. If allowance were made for the remaining credit outstanding at the end of 1961, it is probable that total annual interest charges would exceed $100 million. However, in many cases, the interest charges on trade credit cannot be adequately estimated since these charges may be incorporated into the purchase price of products or take the form of discounts when payment is made before a specified date. The rather scanty information now available suggests that actual interest rates on trade credit may often exceed 16 per cent.

The data in Table 3 do not include figures on credit extended to farmers for the installation of hydro power, outstanding municipal tax arrears, and credit extended by many small companies or the farm credit that may be involved in feed contracts. A comparison of the data in Tables 2 and 3 indicates that when estimates of the amount of farm credit extended are made by institutions or companies they are usually much larger than the total of the indebtedness reported by farmers. For example, the 1958 farm survey indicated about $21 million of farmer indebtedness to credit unions whereas the 1961 estimates indicated that nearly three-quarters of this amount was outstanding in credit union mortgage credit alone. Similarly the farm survey report indicated that there was a non-mortgage farm indebtedness of $14.1 million to insurance, financial and other companies whereas estimates by the companies themselves suggest a much larger amount in 1961. Some of these differences can undoubtedly be attributed to an over-all increase in trade credit between 1958 and 1961 and other differences to the fact that one set of data reflects indebtedness during a survey period whereas the other set reflects either total credit per year or indebtedness at the end of the year. The differences between the various figures are such that a considerable amount of further investigation is warranted.

With the expansion of government-sponsored farm credit, there has developed at the provincial, national and international levels, an increased demand for a better statistical description of the amount of credit supplied to farmers from all sources. The requests of FAO and OEEC for periodic statistical descriptions of farm credit in Canada, the investigation of farm credit by the Royal

Commission on Canada's Economic Prospects, the Dominion Bureau of Statistics' 1958 Farm Survey, the submission on farm credit by the Canadian Federation of Agriculture to the Royal Commission on Banking and Finance, as well as numerous other efforts to statistically describe the Canadian farm credit situation give some idea of the importance of the problem. Many of the gaps in our knowledge of the farm credit picture have been filled in during the last few years. Nevertheless, there is still a great deal of investigation needs to be carried out, especially in those areas involving credit from individuals, companies, and shopkeepers and dealers. More accurate information from banks on yearly credit extended and from credit unions on both credit extended and credit outstanding is required, as well as information from all but government credit sources on the amount of farm credit that is repaid each year. The completion of the farm credit picture will require a more concerted effort to bridge the gaps between already available and needed information.

THE PROBLEMS INVOLVED IN PLANNING BROILER MARKETINGS, AN ANALYSIS OF PLANNED SUPPLY AS THE ANSWER TO OVERPRODUCTION

J. T. HILL

In 1961, broiler prices to producers in the United States and Canada reached all-time low levels. At these extremely low prices the major part of the industry failed to operate at a profit and production was pressed forward with a maximum of efficiency only to minimize losses.

Both industry and government recognized that overproduction was the basic cause of the trouble and that output would have to be maintained at a level consistent with the demand for the product in order to achieve an orderly market and satisfactory returns. In the United States serious thought was given to any proposal which could in any way solve or at least alleviate this serious production problem. One of the most frequent suggestions proposed was that an attempt be made to project the supply of broilers in such a way as to achieve this stability. The material examined in this article is essentially an attempt to plan the future supply so that consumer's needs will be met. There was no proposal made as to how this plan was to be administered. Many proposals for both government and privately operated marketing boards have been made in recent years but the independence of the individual farmer has been jealously maintained. Only a few of these organizations have actually come into operation, and then again only at the regional level. The problem of administering planned market schemes is a subject in itself, and is only mentioned here in recognition of its importance. The immediate purpose of this discussion is an examination of a proposed broiler market scheme. It is not a critique of the goal in view, which is a commendable one, but a criticism of the methods employed to reach this goal.

(a) The Relationship between Marketings (Planned and Actual) and Prices.

The formula employed in this plan[1] establishes the number of broilers for each month of the year which should have been marketed in order to establish a stable market (Table 1). These planned figures were compared with the estimate of the number of broilers actually to be marketed, based on eggs set and chicks placed for broiler production nine weeks earlier.[2] A third column in Table 1 provides the monthly average price per pound received by farmers for commercial broilers.[3]

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[1] Data based on an actual plan drawn up by a private organization in the United States and given wide publicity within the industry as a solution to problems of overproduction then current. (January 1962).

[2] Data provided by the U.S.D.A., See Table 1.

[3] Published by the U.S.D.A.

It was contended (in comparing the planned and actual marketing data) that a slight increase in the actual marketings over the planned amount would be reflected immediately in declining prices. However, if the planned volume had been maintained prices would be maintained at satisfactory levels.

Another way of stating this would be to say that the differential between what was actually marketed and what should have been marketed would always be reflected in a change in price. To prove this statistically, a simple linear regression formula was calculated. The price to farmers for broilers was considered as depending on the difference between the planned marketing data and the actual marketings as shown in our table. The formula was calculated to be:

$$Y=15.086+0.048\ (X).$$

where Y represents the price to be estimated, 15.086 is a constant, 0.048 equals the regression coefficient and X represents the differential.

Table 1.—Comparison of Actual and Planned Marketings and the National Average Price, United States, 1961

	Broiler marketings		National average price
	Planned 1961	Actual 1961	
	—millions of broilers	—	cents per lb.—
January	134	119	16.5
February	139	125	17.6
March	143	134	16.8
April	144	190	15.1
May	146	166	14.4
June	143	204	12.8
July	155	196	12.6
August	146	166	13.0
September	137	195	11.7
October	129	141	12.0
November	123	124	12.2
December	129	142	15.1

The standard error of estimate, 1.66, proved to be very high, and the coefficient of determination showed that only 40.9 per cent of the variation in our estimated value of price could be attributed to the difference between the number of broilers which were marketed and the number which should have been marketed. On the basis of these statistical calculations there is no evidence of any significant correlation between the above differential and broiler prices. It cannot be concluded then that a slight increase in actual broiler marketings relative to those which should have been marketed will be reflected in an immediate price decline.

(b) Planned Marketings and Seasonal Demand.

The poor significance of the correlation does not preclude an examination of the actual calculations which are represented to be the amounts of broiler which should have been marketed, i.e., the planned marketings. When one examines the data in the table, he is immediately struck by the difference between the monthly variability of marketing throughout the year for the broilers marketed and planned marketings. Actual marketings varied from a high point of 204 million broilers in June to a low point of 119 million in

January, a difference of 85 million broilers. On the other hand, planned marketings show a high point of 155 million in July and a low point of 123 million in November, a difference of only 32 million broilers. Statistical techniques which more adequately illustrate this difference in variance are set out in Table 2.

The actual monthly marketing figures show considerably more variation than the planned marketing figures, the coefficient of variation being 20 per cent compared with 6.5 per cent. The variation in prices for 1961 lies between the two values for marketings (see Table 2).

The large degree of seasonal variation in broiler marketing is characteristic of the industry and is a natural reflection of the strong seasonal demand for this product. Consumers have shown a stronger preference for chicken during the second and third quarters of the year, compared with the first and fourth quarters.[1] Since the demand for broiler meat is strong during the summer months, producers plan their output accordingly. For this reason, supplies are shown to be much heavier in June and July than in December and January. This seasonal variation in supply does not in itself cause severe price declines.

Table 2.—Measurements of the Dispersion or Variance for Broiler Marketings, Actual and Planned, 1961

1961	Planned	Actual	National average price
	—million birds	—	cents per lb.—
Mean or average	139	158	14.2
Standard deviation	9.02	31.57	2.05
Coefficient of variation	6.5%	20.0%	14.4%

Standard deviation—A measure of the dispersion of marketings about the mean or average monthly figure. Twice the standard deviation (2s.) measures the amount by which 95 per cent of the monthly marketings come within the annual average, i.e., Dispersion about the mean would be ± 2s. 95 per cent of the time.

Coefficient of Variation—The standard deviation expressed as a per cent of the average or mean, sometimes referred to as the relative standard deviation.

It is inferred, however, that the drastically low prices to producers for broilers from June to November in 1961 in the United States, would not have occurred if the planned marketing scheme set out had been followed.

Despite the fact that there is no statistical evidence to support this hypothesis, the argument itself is considered to be based on a false supposition. It was not the seasonal fluctuation which brought about a depressed market in 1961 but the overriding pressure of supplies in excess of demand.

To support this point, it is only necessary to refer to Table 3 which shows the 1960 data on the same basis as for 1961. The seasonal variation in actual marketings is as large as in 1961 and yet prices remained as high as 17.7 cents a pound in July when the largest amount of broilers were marketed. In 1961, however, up to the end of March, 28 million more broilers had been marketed than 1960. This increase had already reflected itself in a price decline of a few cents. By the end of June, about 17 per cent or 134 million more broilers were being supplied. As a result of continuing oversupply throughout the year, prices remained low up to the end of November. In fact, the proposed planned broiler supply for 1961 reduces output by over 230 million birds compared with actual marketings. This planned figure is also 48 million birds below the actual 1960 marketings. A cutback of this nature would probably create some problems of undersupply, especially during the period of strong summer demand. The planned output also attempts to iron out the seasonal fluctuations in supply called forth by corresponding fluctuations in demand.

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[1] See Stanton, B. F. Seasonal Demand for Beef, Pork and Broilers. Agricultural Economics Research, Vol. XIII, No. 1, Jan. 1961, for a statistical examination of this phenomenon.

Both of these measures establish a situation of artificial supply which distorts the natural equilibrium generally prevailing in the market and creates new price fluctuations which in this case would be more exasperating to the consumer, who would be obliged to pay high prices during the summer when the product is popular and receive offers of bargains when his taste has turned to competitive products during the winter and fall.

(c) Price as a Determinant of Supply.

The above arguments have established that the monthly data for broilers that "should have been marketed" do not solve the problems facing the industry. To examine why the datum is itself in error requires examination of the method used to obtain it.

Table 3.—Comparison of Actual and Planned Marketings With National Average Price, United States, 1960

	Broiler marketings		National average price
	Planned 1960	Actual 1960	
	—millions of broilers —		cents per lb.—
January	136	108	17.1
February	138	113	17.6
March	141	129	18.0
April	138	172	17.4
May	142	141	17.5
June	146	141	17.6
July	145	193	17.7
August	136	156	16.6
September	128	179	15.8
October	116	126	15.8
November	108	116	15.7
December	118	142	15.5

Essentially the formula postulates that the correct monthly supply of broilers in any year is based on the average of prices received in the past two years and consumer expenditure on broilers in the past year alone. Consumer expenditure is calculated from market supply of broilers and broiler prices. It, therefore, also depends on the price factor.

Price is a strong element in the determination of planned supply in this marketing formula. However, to determine planned output on the basis of price, one must assume a relatively constant demand schedule during the period for which output is determined. If the demand schedule shifts, because of changes in consumer taste and preferences for the product under study or for other products, there will be a change in equilibrium and either a deficiency or a surplus of the product will occur, causing an immediate upward or downward pressure on prices. Since we can be sure there will be frequent shifts in the demand schedule for broilers not only along the schedule but in the schedule itself, the assumption cannot be made that it will remain constant.

Price is, therefore, inadequate as a determinant of a planned marketing scheme for broilers which is designed to meet the changing seasonal needs of a growing population. To make an adequate prediction of the correct marketing volume in a particular month, it is necessary to determine the demand for broilers in that month. Since this depends on the changing tastes of the consuming public as well as on a host of other factors this would be a difficult task. Historically, the built-in adjustment of the price mechanism in a free market has done the best job. When artificial planning methods using inadequate or inappropriate data are used, however, more problems are frequently created than are solved.

THE EGG-PRICE DIFFERENTIAL BETWEEN THE PRAIRIE PROVINCES AND EASTERN CANADA

J. T. HILL

Poultry producers in the three Prairie provinces have historically received lower prices for their eggs than producers in eastern Canada or British Columbia. Producers in these provinces usually point to this situation as if it were some form of economic discrimination which needed to be corrected. However, rather than being a regional or provincial anomaly it is in fact a circumstance which has come about and is being maintained by the natural forces of supply and demand prevailing in a free competitive market.

The egg market is highly competitive and the price which a buyer will pay depends on two major factors:

(1) The amount of the commodity available in relation to the demand for it;

(2) The quality of the commodity.

In discussing the first factor affecting demand, it will be assumed that consumer demand for eggs is similar in all parts of Canada[1]. The national average consumption has been estimated at about 24 dozen per capita during the past three years and it can be assumed that this figure roughly represents the average demand for eggs in all parts of Canada.

What is the amount available to meet this demand? In 1961 national average per capita production amounted to 24.5 dozen eggs. The per capita output in the Maritimes and B.C. was very close to this figure and Ontario produced about six dozen more per person.

The two regions which depart considerably from the national average include Quebec which produced 11.8 dozen per capita and the Prairie provinces which produced 37.5 dozen per capita in 1961. When the per capita demand for eggs is compared with these figures it can be seen that the Prairie provinces produce more eggs than they consume. This surplus production has a downward effect on Prairie prices. In Quebec, the supply deficiency increases the demand for eggs and prices tend to be higher.

Quality is another factor influencing prices. As can be seen from Table 2 Prairie grading stations market the highest percentage of low-quality eggs (Grades B, C and Cracks) 23.8 per cent of total gradings in 1961, half again as large as the national average, and the lowest proportion of A Large and A Extra Large eggs.

As a result of the depressing effect of the lower prices received by Prairie farmers for smaller-size poorer-quality eggs, the average prices for all grades is further depressed. This is illustrated in Table 3 which shows the wider

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[1] Provincial per capita figures are not available.

Table 1.—Per Capita Production of Eggs in Canada, by Provinces and Regions, 1956-60 average and 1961[a]

	1956–60 Per capita		1961 Per capita		Weighted average price—all grades 1961
	output	consumption[b]	output	consumption[b]	
	—dozens—				—cents per dozen—
British Columbia	23.5	24.5	24.5	23.5	32.1
Alberta	31.5	24.5	34.8	23.5	24.4
Saskatchewan	46.1	24.5	37.9	23.5	22.9
Manitoba	53.4	24.5	41.1	23.5	24.7
Prairie provinces	42.3	24.5	37.5	23.5	24.0[d]
Ontario	32.2	24.5	30.6	23.5	32.9
Quebec	12.5	24.5	11.8	23.5	33.8
Atlantic provinces	24.5	24.5	23.8	23.5	33.8[d]
Canada[c]	**26.0**	**24.5**	**24.5**	**23.5**	**31.3**

[a] Intercensal revisions of egg production will be made by the D.B.S. for these years. None of these revisions have as yet been published.

[b] National average; not available by province. Dominion Bureau of Statistics, Ottawa.

[c] Based on Canada's total population including Newfoundland, N.W.T. and Yukon, while output excludes these areas. Dominion Bureau of Statistics.

[d] Simple average of provincial components. Weighted averages are obtained from the Poultry Market Review, Canada Department of Agriculture.

Table 2.—Amounts and Proportions of Eggs Graded in Registered Premises in Canada, by Regions, 1961

	A Large and A Extra Large		All Grade A's		B's, C's and Cracks	
	cases	per cent	cases	per cent	cases	per cent
British Columbia	420,083	60.5	618,208	89.0	76,373	11.0
Alberta	258,293	53.3	381,435	78.7	103,471	21.3
Saskatchewan	86,972	37.1	122,365	52.2	112,107	47.8
Manitoba	355,740	54.3	543,349	82.9	111,962	17.1
Prairie Provinces	701,005	51.0	1,047,149	76.2	327,540	23.8
Ontario	2,217,505	61.4	3,260,823	90.3	350,276	9.7
Quebec	419,084	58.7	656,066	91.9	58,053	8.1
Atlantic Provinces	291,710	59.4	447,590	91.1	43,795	8.9
Canada	**4,049,387**	**58.8**	**6,029,836**	**87.6**	**856,037**	**12.4**

SOURCE:—*Poultry Market Review—1961*, Canada Dept. of Agriculture, Ottawa.

Table 3.—Margin in the Prices of Weighted A Large Eggs and Weighted Eggs all Grades, Canada, 1955-1962

	All grades—Weighted[a]			Grade A Large—Weighted[b]		
	Ont.	Sask.	Difference	Ont.	Sask.	Difference
	— cents per dozen —					
1955	39.4	28.5	10.9	41.6	33.6	8.0
1956	39.1	29.9	9.2	42.4	35.6	6.8
1957	32.4	24.3	8.1	35.6	31.7	3.9
1958	35.0	23.5	11.5	38.8	30.8	8.0
1959	30.1	21.8	8.3	34.0	29.6	4.4
1960	31.2	20.8	10.4	34.0	26.1	7.9
1961	32.9	22.9	10.0	36.0	26.6	9.4
1962[c]	29.0	21.5	8.5	32.1	26.8	5.3

[a] Poultry Market Review. Canada Department of Agriculture, Ottawa.

[b] Economics Division, Canada Department of Agriculture, Ottawa.

[c] First nine months only.

margin between Ontario and Saskatchewan prices for all grades of eggs compared with the A Large grade alone. The large quantity of B's, C's and Cracks marketed in the Prairie Provinces and especially in Saskatchewan, influence the price for all grades in a downward direction and has an important effect on the total revenue potential of Prairie eggs.

Two points have been made above which should be further qualified before we proceed.

The first point emphasizes the tendency for Prairie producers to produce more eggs than can be consumed in their locality. It is pointed out later on in this article that Prairie poultrymen still seem to be finding this operation profitable. The question is, how? Part of the answer may lie in the lower production costs experienced on the Prairies compared with the rest of Canada. It goes without saying that feed grain is more accessible and it is because of this plentiful supply of local grain that egg producers in this region use a farm mixed laying ration, combining local or home-grown wheat, oats, barley and rye with feed concentrates. A recent study examining the egg-feed ratio in Canada[1] indicates the importance of complete pre-mixed poultry feeds in Ontario and Quebec while the amount of concentrates utilized in on-the-farm feed preparations on the Prairies represents a substantial portion, roughly 75 to 85 per cent, of the complete feed fed to poultry. Since feed costs represent anywhere from 40 to 60 per cent of the total operating costs of a polltry farm, it is evident that Prairie producers have some cost advantages compared with producers in eastern Canada.

Table 4.—Number of Farms Reporting Hens and Pullets Six Months Old and Over, by Flock Size, Ontario and the Prairies, 1951 and 1961

Flock size[a]	Ontario farms				Prairie farms			
	1951		1961		1951		1961	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
1–77	66,146	*71.7*	32,037	*60.0*	142,216	*89.0*	85,446	*84.9*
78–177	19,643	*21.1*	10,358	*19.4*	14,595	*9.1*	10,214	*10.2*
178–527	6,646	*7.1*	8,594	*16.1*	2,792	*1.7*	3,929	*3.9*
528–972	374	*0.4*	1,206	*2.2*	174	*0.1*	505	*0.5*
973 and over	238	*0.3*	1,236	*2.3*	70	*0.1*	509	*0.5*
Total	93,047	100.0	53,431[b]	100.0	159,847	100.0	100,603[b]	100.0

[a] An average flock of 500 hens in Ontario could be expected to lay about 8,600 dozen eggs in one year. About 60 per cent of this total or close to 5,200 dozen would consist of the premium grades, Grade A Large and Extra Large. In the Prairies a 500-bird laying flock would average about 7,500 eggs of which about half or 3,750 dozen included the top two grades. Based on average rates of lay and grading station receipts.

[b] In 1961, Ontario produced 42.8 per cent of *all* eggs in Canada; the Prairies 26.7 per cent, in spite of the fact that there were almost twice as many farms on the Prairies reporting hens.

Note:—Good laying strains are used in all parts of Canada but Ontario producers achieved a much higher rate of lay (208 eggs per hen) than the Prairies (180 eggs per hen) in 1961.

SOURCE: Census of Agriculture, Canada 1951 and 1961. Dominion Bureau of Statistics, Ottawa.

Another cost advantage for Prairie poultry-men can be attributed to the structural differences in operation in this region. A large number of these producers carry a small laying flock to supplement their income, their main interest being centred in cattle, hogs, or cash grain. These structural differences are illustrated in Table 4 which shows the large concentration of small flock owners in the Prairie provinces, where 84.9 per cent of the farms reporting in 1961 show flocks of less than 77 birds. With operations of this size the cost of maintaining buildings and equipment is usually lower. Labor costs are also lower as far as cash expenditures are concerned, since small flocks are easily maintained by members of the family (Table 4).

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[1] An unpublished study by H. J. Mestern, Economics Division.

The second point to be qualified is essentially an expansion of the above as it relates to the marketing of eggs. Sideline producers market their eggs where possible in the immediate locality, supplying local retail outlets with eggs. When these channels become over-supplied and eggs are plentiful, the excess is generally marketed through the nearest egg grading station. In Saskatchewan, where this situation is most prevalent, the delay involved in moving these surplus eggs often results in a loss of quality and revenue, because of lower grades at the station. In Ontario, however, it is the practice of large commercial producers to grade their eggs as soon as possible after they have been gathered. These regional differences in marketing and distribution habits are, therefore, an important consideration to be kept in mind when the quality of eggs in the Prairie provinces is compared with the quality in Ontario.

Surplus production and low-quality eggs, being characteristic of the Prairie region for reasons explained above, are seen as important factors in depressing the price of eggs in the Prairie provinces. Why does this situation persist? Low prices should have reduced production to meet the local demand, a natural correction characteristic of the price mechanism in a free market.

This has not happened because the Prairie provinces have been able to find a market for their surplus eggs elsewhere, especially in the province of Quebec (Montreal) where there is a good demand owing to that province's position as a deficit production area. The movement of Prairie eggs to other parts of Canada has represented about 8.6 per cent of total gradings in this region over the past ten years (Table 5). In 1960 and 1961 shipments to Eastern Canada remained high and shipments to British Columbia, mainly from Alberta, have continued to represent a substantial volume, although British Columbia has taken fewer eggs from Alberta during the past five years than in the 1952-56 period. A few shipments move into the Prairies from Ontario

Table 5.—Movement of Eggs from the Prairie Provinces to Eastern Canada and British Columbia, Inspected Interprovincial Shipments, 1952-1961[a]

	Destination of inspected Prairie shipments			Total grading station receipts	Per cent of total gradings shipped
	British Columbia	Eastern Canada	Total	Prairie Provinces	Out of Prairies
	cases	cases	cases	cases	per cent
1952	48,287	71,687	119,974	1,365,979	*8.8*
1953	84,856	109,094	193,950	1,378,679	*14.1*
1954	40,028	26,323	66,351	1,290,768	*5.1*
1955	81,128	111,005	192,133	1,321,229	*14.5*
1956	62,888	95,294	158,182	1,428,129	*11.1*
1957	14,272	48,050	62,322	1,610,899	*3.9*
1958	23,265	163,553	186,818	1,696,090	*11.0*
1959	10,158	64,382	74,540	1,698,732	*4.4*
1960	14,657	87,098	101,755	1,447,620	*7.0*
1961	24,547	80,224	104,771	1,375,339	*7.6*
1952–61	40,409	85,671	126,080	1,461,346	*8.6*
1957–61	17,380	88,661	106,041	1,565,736	*6.8*

[a] Inspected shipments represent the bulk of the total movement from the Prairies. Most shippers find an inspection certificate a necessary prerequisite for the sale of their carlot. Seasonal movement is evident. In 1961 about 75 per cent of the total movement from the Prairies occurred during the first six months.

SOURCE: Poultry Market Review, 1952 to 1961. Canada Department of Agriculture, Ottawa.

Table 6.—Intermarket Movement of Grade A Large Eggs, Winnipeg to Montreal, 1951–1961 and 1961 by Quarters

	Winnipeg spot price A Large[a]	Freight rates Winnipeg to Montreal[b]	Cost, delivered at Montreal	Montreal spot price A Large	Estimated margin
	—cents per dozen—				
1951	60.9	3.8	64.7	68.6	3.9
1952	43.6	4.1	47.7	50.6	2.9
1953	52.2	3.5	55.7	58.8	3.1
1954	41.6	2.7	44.3	46.4	2.1
1955	46.5	2.7	49.2	52.9	3.7
1956	45.9	2.9	48.8	51.8	3.0
1957	40.2	3.0	43.0	45.7	2.7
1958	40.0	3.1	43.1	47.0	3.9
1959	38.3	3.6	41.9	43.1	1.2
1960	36.2	3.6	39.8	43.4	3.6
1961	37.1	3.6	40.7	45.1	4.4
1961					
First quarter	31.6	3.6	35.2	39.4	4.2
Second quarter	32.5	3.6	36.1	39.6	3.5
Third quarter	43.4	3.6	47.0	51.4	4.4
Fourth quarter	40.8	3.6	44.4	50.0	5.6
1956–60 average	40.1	3.2	43.3	46.2	2.9

[a] Prices paid by wholesale buyers for graded shipments from egg grading stations.

[b] Most eggs are recognized to move now by truck. Truck rates are usually pegged to the railway rates in such a way as to be less expensive for the shipper. However, since trucking rates are difficult to obtain for comparison, freight rates are used here.

Source: Economics Division, Canada Department of Agriculture, Ottawa.

and B.C. when the prices are right but this movement is generally of a seasonal nature and is negligible in comparison with the amount that moves out. In general, the Prairie producer has shipped a large part of his output to areas outside his own region. As long as shippers are able to purchase Prairie eggs, and sell them in other centres at a profit, Prairie poultrymen will have a market for their eggs. Perhaps they will receive less per dozen for their product than producers in other provinces, but the fact that they remain in business suggests that there is still a profit to be made.

Table 6 shows the margin available to shippers who buy graded eggs in Winnipeg and ship to Montreal by rail. This table does not attempt to show what the actual returns to a shipper may be, as each individual makes his own financial arrangements with those from whom he buys and to whom he sells. These arrangements may place him above or below the estimated margin shown in Table 6.

The movement of eggs from the Prairies to Montreal maintains the existing price differential because of the economic factors discussed earlier in this article. If the Montreal price, using it again as an example, falls under pressure of heavier supplies from local or Ontario producers, it will reach a level where it will no longer be profitable to ship eggs from Winnipeg. As a result, Prairie producers lose their market, supplies accumulate and Prairie prices fall. If the Montreal price rises, Prairie eggs will find their way to the higher-priced market, reducing supplies, and Prairie prices will rise. Thus, the Prairie price is virtually pegged to its market by the cost of shipping the marginal egg, that egg which is sold at a price which equals the cost of shipping to the market where sold. Since Montreal is considered to be the most important market for Prairie eggs, variations in the market price of eggs there, directly influence prices in the Prairie provinces.

COMPARATIVE OPERATING COSTS OF ENERGY CONSUMED IN THE DRYING OF MASHED POTATOES

E. S. EATON

In the dehydration of mashed potatoes, or of any other product, heat energy is required to convert the water content into vapor. This energy bears a fixed physical relationship to the weight of the water. However, because of inefficiencies in practical operations, there is always some loss of energy, by comparison with the theoretical requirement, for the heating and evaporation of the constituent moisture of a product. One of the important costs in a commercial dehydration operation is the cost of this energy.

The continuous discovery of new processes and products and our concern with the costs and savings involved in these discoveries have prodded us into making an analysis of the comparative costs of various types of heat energy used in the drying of food products. Our calculations are based on data supplied by E. A. M. Asselbergs[1] and collected as part of laboratory work on the drying of mashed potatoes, as well as on rates supplied by commercial energy suppliers.

Hydroelectric Energy.—On a laboratory test run, using 24 kilowatts of quartz tube infrared generators, an hourly output of seven pounds of dried mashed potato was obtained.

With an output of one pound of dried product from each five pounds of wet mashed potato, the production of each pound of dried product is associated with the evaporation of four pounds of water. Hence, the production of one pound of dry product would require the consumption of 3.4285 kilowatt-hours of electrical energy.

A demand load of 1,750 kilowatts, operated for an assumed 400 hours a month, would turn out 204,170 pounds of finished product or process 1,020,850 pounds of wet mashed potatoes, or 20.4 tons per 16-hour day.

The rates for Ontario Hydro energy vary from city to city, depending on the availability of energy, the market demand for energy, and the historic effect of modifying agreements. Commercial users are normally charged for the peak demand load of their installation as a basic charge, plus a declining energy charge for the electrical energy consumed. On the basis of the assumed processing of 20 tons of mashed potato daily, the energy charges at the rates shown in Table 1 would be as indicated in Table 2, assuming benefit of prompt-payment discount of 10 per cent and no penalty.

Drying Energy from Steam.—Assuming a 20 per cent recovery rate of finished product from wet mashed potatoes, each pound of finished product requires the evaporation of four pounds of water. It is assumed that the evaporation of 1,000 pounds of water requires the use of 1,333 lbs. of steam under factory conditions. According to estimates by the Department of Public Works, the cost of steam averages about $2.00 per 1,000 lbs. The imputed steam cost involved in the evaporation of water would thus work out at 1.06 cents per pound of finished product.

Gas as an Energy Source.—Four infrared generating units, of 45,000 B.T.U. capacity each, were used in a laboratory test run to dry mashed potatoes. The gas was fed through a porous surface and ignited on emergence. The burning gas and resultant heated surface functioned as an infrared radiating energy source. The four units combined to give an hourly output of nine pounds of finished product of dried mashed potatoes. Natural gas is given by Ottawa Gas as containing releasable energy at the rate of 1,030 B.T.U.'s per cubic foot. With the efficiency obtained in the laboratory test run, each pound of finished

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[1] Food Processing and Storage Section, Plant Research Institute, Research Branch, Canada Department of Agriculture.

Table 1.—Energy and Service Rates, Ontario Hydro, Selected Areas, 1961

Area	Monthly demand charge per kw	Energy block demand, x hours	Rate[a] 1st block	Rate[a] 2nd block	Rate[a] All additional
	$	hours	—cents per kilowatt-hour—		
Ottawa	1.00	100	1.4	0.5	0.33
Toronto	1.00	50	2.1	1.4	0.38
Peterborough	1.20	50	1.4	0.9	0.30
Smith Falls	1.00	50	1.5	1.1	0.25

[a] Less 10 per cent discount for prompt payment and plus 0.4 mills per kilowatt of demand as a penalty charge if demand is used in excess of 70 per cent of continuous in any one day.

Table 2.—Energy Cost for Electrical Energy at Selected Ontario Areas, per Pound of Dried Mashed Potatoes

Area	Energy cost per pound of finished product
	—cents—
Ottawa	2.81
Toronto	3.06
Peterborough	2.56
Smith Falls	2.40

Table 3.—Comparative Energy Costs per Pound of Dried Mashed Potato

	Energy cost per pound	Notes
	—cents—	
Hydroelectric energy	from 2.40 to 3.06	depending on location
Steam	1.06	based on D.P.W. estimates of cost.
Gas (natural)	0.89 to 1.94	depending on agreement.
Propane	2.88	at 19 cents per gallon. (110,000 B.T.U.)

product required the consumption of 1,667 B.T.U.'s or 1.618 cubic feet of gas. An assumed output of 200,000 pounds of finished product per month would require 3,236,000 cubic feet of gas.

For commercial users there are several applicable rates, depending on whether the user employs gas exclusively or whether the user also employs a competing fuel for plant heating. In addition, very large users can qualify for an individually negotiated rate. In each case, the calculation of costs according to the sliding-scale rates 2-G and 2-H, supplied by Ottawa Gas show a cost of $32.84 for the first 15,000 cubic feet of gas used per month. Where a competing fuel is also used, all consumption above this quantity costs $0.12 per hundred cubic feet. Where gas is the sole fuel used, there is an additional block of gas of 85,000 cubic feet at the $0.12 rate, after which the rate drops to $0.09 per hundred cubic feet.

On the basis of the above rates, a user processing 200,000 pounds of finished product per month and using gas as his sole heating fuel would have a gas energy cost averaging 1.479 cents per pound of finished product. If he used a competing fuel for part of his heating requirement his average gas energy cost per pound of finished product would be 1.949 cents.

However, at these levels of consumption, he would be in a position to negotiate for an individual service contract which would, on a "Firm Service", contract lie between the rates of 5.5 cents and 12.0 cents per hundred cubic feet of gas or an equivalent cost per pound of finished product of between 0.89 cents and 1.942 cents.

If an "Interruptible Service" contract were negotiated at a rate between 3.0 cents and 6.5 cents per hundred cubic feet, the energy cost per pound would work out between 0.485 cents and 1.052 cents. It is not likely, however, that this form of contract would be satisfactory for the manufacture of dried mashed potatoes.

The above costs are for energy consumed in the drying operation only. In addition, the capitalization and other costs would need to be considered, including such items as: insurance, taxes, depreciation, interest on investment, expected repairs and maintenance costs, labor costs, rent on land and buildings, and several other items which could vary according to the kind of installation. It may be assumed that the cost of consumable materials would be comparable between different types of plant.

PUBLICATIONS OF THE ECONOMICS DIVISION

Exports, Imports and Domestic Disappearance of Agricultural Products as a Percentage of Production—Canada, 1935 to 1960.—A report prepared in co-operation with the Agriculture Division of the Dominion Bureau of Statistics. Berthiaume, Rachel. Ottawa, October 1962. pp. 9.

The sixth issue of an annual report on trends in exports, imports and domestic disappearance of agricultural products in Canada.

Co-operation in Canada, 1961.—Fortier, R. Ottawa, November 1962, pp. 18.

The 30th annual summary of co-operative activities in Canada. This summary is chiefly concerned with marketing and purchasing co-operatives, service co-operatives, fishermen's co-operatives, and co-operative wholesales.

UNITED NATIONS PUBLICATION

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Monthly Bulletin of Agricultural Economics and Statistics.—Vol. II, Nos. 6, 7-8, and 9, June, July-August, and September 1962. FAO, Rome, Italy.

No. 6 has an article on Special Problems of Agricultural Planning, No. 7-8 an article on International Barter Involving Agricultural Products, and No. 9 one on The Private Sector in Soviet Agriculture and a special feature on Sugar: A Review of the Industry in the U.S.S.R.

Economic Bulletin for Europe.—Prepared by the Secretariat of the Economic Commission for Europe. Vol. 14, No. 1. September 1962. pp. 111.

This issue of the Economic Bulletin indicates the important role of Western Europe in world trade. In 1961 the largest contribution of the group of developed market economies to a slower but continued growth of trade came from that area whereas North America's increase in foreign trade was insignificant. The other countries with developed market economies—Japan, Australia, New Zealand and the Republic of South Africa—had a much faster expansion in exports than Western Europe but their imports did not increase in 1961. The growth of European trade was due, even more than in 1960, to a continued expansion in intra-European exchanges. The EEC countries had the highest rate of expansion; on the average, they had a faster over-all trade growth and a faster economic growth than other countries in Western Europe, and clearly faster than that of the United Kingdom.

Western European exports to Canada and the United States declined by 1 per cent in 1961, after a fall of nearly 5 per cent in 1960. Imports had risen by 39 per cent in 1960 but rose only 2 per cent in 1961. North America's share in W.E.'s external trade thus reverted to about the 1957 level.

The main points covered in the Bulletin center around Europe's place in world trade, recent developments in the trading situation of Western Europe, recent developments in Western European trade, Eastern European trade, new tariffs in the Soviet Union and in Hungary, and trade between eastern and western European countries.

OTHER PUBLICATIONS

Resources for Tomorrow—Supplementary Volume (Seven background papers on agriculture, water and regional development, supplementary to volumes I and II prepared for discussion at the 1961 national Resources for Tomorrow Conference). The Queen's Printer, Ottawa, 1962. pp. 195 + 10 maps. Price $1.00.

The papers include: 1) *Implications of Technological Change for Agricultural Productivity,* by L. H. Shebeski; 2) *Disease and Pest Control,* by A. P. Arnason; 3) *Research for Agricultural Adjustment,* by H. G. Dion; 4) *A Typical Drainage Basin: The Ottawa River,* by G. Prévost; 5) *Air Pollution as a Canadian Regional Problem,* by M. Katz; 6) *The Impact of Urban Growth on Agricultural Land: A Pilot Study,* by J. Hind-Smith; and 7) *The Loss of Farmland in the Growth of the Metropolitan Regions of Canada.*

Scientific Method: Optimizing Applied Research Decisions.—Ackoff, Russell L. with the collaboration of Shiv K. Gupta and J. Sayer Minas. John Wiley & Sons, Inc. New York and London, 1962. pp. xii + 464.

This book points to a new direction in studies of decision making in that it is a scientific and not a philosophical study of the scientific process. "It is a book on planning or designing the use of science in the pursuit of objectives" and "is intended to improve the skill of the scientist in the conduct of inquiry."

The problems relating to the research processes are so formulated that recent developments in decision theory can be applied to the research process itself. The author discusses the meaning of "optimal solutions to problems, the formulation of research problems, the construction of scientific models, the content and form of operational definitions, procedures for obtaining symbols that can be used to represent concepts to be defined, the various aspects of statistical inference, the derivation of solutions from models, the location of the optimum of a decision function, the testing of the adequacy of the model and of the solution derived from it, and the implementation and organization of research". He ends his study with an epilogue on *"The Ideals of Science and Society."*

Seasonality of Milk Output.—A Preliminary Report on Summer Milk Production in the South West, Langley, J. A. Department of Economics (Agricultural Economics), University of Exeter, Newton Abbot, Devon, England. Report No. 136. November 1962. pp. 30.

A report dealing with seasonality patterns and some characteristics of summer milk producers.

Milk Production in South West England.—A Study of 48 Herds, 1960-62. Roscoe, Betty J. and J. A. Langley. Department of Economics (Agricultural Economics), University of Exeter, Newton Abbot, Devon, England. Report No. 135. November 1962. pp. 57.

A report concerned with national and regional considerations in milk production and with the results of a 1960-62 investigation.

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THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

APRIL 1963 **Vol. XXXIII No. 2**

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G. P. BOUCHER, Editor

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935–39 = 100						1949 = 100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	225.5	181.0	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	263.9	290.8	235.1	130.7	126.2	186.1
1962										
Jan.	237.0	233.3	195.6	271.0	266.7	283.4	233.6	129.7	124.8	179.8
Feb.	237.1	233.6	196.4	270.8	265.7	....	....	129.8	125.0	182.5
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	184.3
April	237.4	233.7	195.4	272.0	266.1	293.1	235.8	130.3	125.8	184.1
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.0
June	240.3	243 3	200.7	285.8	272.8	....	....	130.5	125.6	186.6
July	241.3	249.6	203.7	295.6	277.7	....	....	131.0	127.0	186.3
August	242.6	238.0	171.6	304.3	262.5	295.8	236.0	131.4	128.4	189.2
Sept.	241.9	231.8	165.8	297.8	257.4	....	....	131.0	126.8	189.1
Oct.	241.7	232.1	165.9	298.2	255.9	....	....	131.5	127.2	188.8
Nov.	242.2	232.7	165.1	300.3	254.5	....	....	131.9	127.7	189.5
Dec.	242.2	230.0	167.2	292.8	253.4	....	....	131.9	127.8	189.3
1963										
Jan.	242.9	227.0	170.7	283.3	250.8	290.8	237.6	132.0	129.0	189.3
Feb.	242.7	224.1	174.3	273.8	249.8	....	....	132.1	129.4	....
Mar.	242.4	222.1	175.4	268.8	247.3	....	....	132.1	128.9	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Investment.—A recent survey of capital spending intentions of all sectors of the Canadian economy, conducted by the Department of Trade and Commerce, reveals plans for outlays of $9.1 billion. This capital program, the largest on record, will exceed the $8.7 billion spent in 1962 by about four per cent. Expenditures for new construction are expected to increase by four per cent from $5.8 billion in 1962 to 6.1 billion in 1963. Outlays for machinery and equipment are expected to increase by five per cent from $2.9 billion to 3.0 billion.

The capital expenditure program in the 1958-63 six-year period may be summarized as follows:

Sector	1958	1959	1960	1961	1962[a]	1963[b]
	—millions of dollars—					
Business capital (excluding housing):						
Forest and mineral products	715	728	863	818	969	1,012
Fuel and power	1,329	1,044	992	1,090	1,010	1,230
Trade, finance and commercial services	705	833	875	847	847	794
Transportation, storage and communication	1,073	1,025	990	829	830	885
Other	1,048	1,171	1,154	1,183	1,301	1,296
Subtotal	**4,870**	**4,801**	**4,874**	**4,767**	**4,957**	**5,217**
Housing and social capital:						
Housing	1,782	1,752	1,456	1,467	1,587	1,571
Institutional services	514	536	573	616	808	833
Government departments and waterworks	1,198	1,328	1,359	1,322	1,386	1,467
Subtotal	**3,494**	**3,616**	**3,388**	**3,405**	**3,781**	**3,871**
Total capital expenditures	**8,364**	**8,417**	**8,262**	**8,172**	**8,738**	**9,088**

[a] Preliminary.
[b] Intentions.

Wholesale Prices.—The general wholesale price index (1935-39=100) was estimated at 242.9 for January 1963 and 242.7 for February 1963, as compared with 237.0 and 237.2 for January and February 1962 respectively.

The vegetable products component of the index rose to 220.6 in January 1963 and 222.4 in February 1963 from 209.6 and 210.2, respectively, in the corresponding months of 1962. The animal products component, on the other hand, declined from 260.9 in January to 256.2 in February 1963; comparative figures for the corresponding months of 1962 were 256.4 and 256.6 respectively.

Farm Prices.—Canada's index of farm prices (1935-39=100) declined to 251.0 in January 1963 from 253.3 in December 1962. Lower prices for livestock and eggs were only partly offset by higher prices for potatoes.

Farm Cash Income.—Farm cash income, excluding supplementary payments, reached an all-time high level of $3,080.7 million in 1962, and exceeded by 4.3 per cent the previous high peak of $2,954.0 million reached in 1961. The more important contributors to the higher farm cash income in 1962 than in 1961 were the increased returns from deliveries of wheat, cattle and calves, larger participation payments on previous years' grain crops, and increased net advances on farm-stored grain in western Canada. Oats, rye, vegetables, and dairy and poultry products recorded smaller gains. Income was lower in 1962 than in 1961 for barley, rapeseed, tobacco, and hogs.

Canadian farmers also received about $70.3 million in the form of supplementary payments under the provisions of the Prairie Farm Assistance Act and of the Western Grain Producers' Acreage Payment Plan. In 1961 supplementary payments totaled about $35.8 million; the largest part of this amount was paid out under the provisions of the P.F.A.A.

Farmers' income from farming operations and from supplementary payments, when added together, reached a record level of $3,151.0 million in 1962 and exceeded the 1961 total of $2,989.7 million by 5.4 per cent.

Farm Net Income.—Total farm net income in Canada, including changes in farm inventories of grains and livestock is estimated at $1,552 million for 1962, and exceeds by nearly 50 per cent the $1,044 million recorded for 1961; the 1962 total is the highest one since 1953 when farmers realized a total farm net income of $1,644.4 million. Farm cash income and supplementary payments were higher in 1962 than in 1961 but most of the over-all increase in total net farm income is attributable to the large increase in grain production in western Canada.

Part of the increase reflects a build-up of year-end inventories of grain on farms. Realized farm net income, which excludes the effects of inventory changes, was estimated at $1,376.3 million in 1962 and $1,324.6 million in 1961.

Farm cash income, the chief component of net farm income, reached an all-time peak of $3,080.7 and exceeded by 4.3 per cent the previous record of $2,954 million established in 1961. The main contributors to the gains in farm cash income were the increased returns from deliveries of wheat, cattle and calves, larger participation payments on previous years' grain crops, and increased net advances on farm-stored grain in western Canada. Less important contributors were oats, rye, vegetables, and dairy products.

Supplementary payments, which consisted of payments under the Prairie Farm Assistance Act and the Western Grain Producers' Acreage Payment Plan, totaled $70.3 million in 1962. In 1961 payments totaled $35.8 million and consisted chiefly of payments under the Prairie Farm Assistance Act.

Farm operating expenses and depreciation charges rose to $2,114.7 million in 1962 from $2,007.8 million in 1961. Much higher outlays were recorded for rents, and livestock feeds, and for the operation and repairs of farm machinery.

Net income of farm operators from farming operations, by provinces, in thousands of dollars and with figures for 1961 in parentheses, was as follows: Saskatchewan, $494,017 ($137,792); Ontario, $316,727 ($332,156); Alberta, $308,131 ($241,129); Manitoba, $183,869 ($64,659); Quebec $159,749 ($179,073); British Columbia, $63,918 ($58,943); Nova Scotia, $10,036 ($13,041); New Brunswick, $9,758 ($10,781); and Prince Edward Island, $5,768 ($6,507).

Milk.—The January 1963 milk output was estimated at 1,160 million pounds, an increase of 1.9 per cent from January 1962. The December 1962 output totaled 1,217 million pounds and the December 1961 output 1,201 million pounds. Production for the full year was estimated at 19,278 million for 1962 compared with 19,226 million for 1961.

Production totals, by provinces, in thousand pounds and with figures 1961 in parentheses, were as follows: Prince Edward Island, 212,948 (216,905); Nova Scotia 396,765 (402,172); New Brunswick, 434,413 (446,785); Quebec 6,608,527 (6,540,039); Ontario, 6,621,194 (6,498,711); Manitoba, 1,131,264 (1,127,292); Saskatchewan 1,281,531 (1,343,702); Alberta, 1,583,069 (1,669,320); and British Columbia, 904,885 (911,052).

Poultry.—The total, of all poultry on farms in Canada at December 1, 1962, was estimated at 53.4 million birds, which is about the same number as a year previously. The estimated number of hens and chickens dropped to 48.5 million from 49.1 million. The total number of turkeys rose from 3.8 million to 4.4 million, the total number of geese dropped from 249,000 to 222,000 and the total number of ducks from 322,000 to 281,000.

FARM SURVEY DATA RELATIONSHIPS WITH MANAGERIAL ABILITY

R. S. Rust

In farming as in industry, the extent and outcome of the individual firm's operations depend largely on the quantity, quality and proportion of the land, labor and capital which are available, the possible profit margins, the extent of production and sales, and the quality of the management. In making industry surveys, a great deal of attention is frequently focused on management since this resource has been often exposed as the key factor determining success or failure in business[1]. In reporting information obtained from farm surveys, there is rarely any similar attempt to relate success or failure to management, even though the probability of losses attributable to the quality of the management factor may be as great or greater than in industry. The lack of recorded relationships between farm survey data and managerial ability levels not only reduces the types of uses of collected statistical data but also prevents the development of extension programs especially directed toward groups of farm managers of varying ability. In some cases, agricultural extension publications may be directed, for example, to those farmers who have had ten or more years of schooling. It is probable, however, that farm readers who have only had seven or eight years of schooling will pay only scant attention to such material.

In a recent farm survey[2], an attempt was made to relate the data collected to levels of managerial ability. Immediately after each lengthy interview the management was quickly evaluated in terms of a number of subjective and partially objective factors which were thought to have a relationship with managerial ability regardless of the extent of the resources that the management had at its disposal. These evaluations were made without reference to the large amount of data collected. After the survey the evaluations were converted to numerical terms, totaled and added to another numerical factor which represented the average annual increase in net worth as established from farm appraisals[3]. The final numerical totals for the various farm operators were then placed in descending numerical order and divided into, (1) the upper and lower one-quarter groups (15 farm operators in each), (2) the upper and lower one-third groups (20 farm operators in each), and (3) the upper and lower one-half groups (31 and 30 farm operators in each respectively). With this grouping, it was then possible to compare statistically the average group response of one of the upper groups, to any questions, with the average group response to the same question by the comparable lower group.

Age of Operators, Education Levels and Size of Families.—Two restrictions used in the selection of the sample, namely that the farm operators had to be war veterans and that they must have started their farming operations during the period from 1946 to 1949 inclusive, made it almost inevitable that the differences between the average age of each group would not be large. At the same time, compulsory school attendance requirements in Ontario required attendance until the completion of public school or the attaining of a slightly higher age equivalent, during the time the individuals included in the sample were going to school. It could thus be assumed that the average education attainment of the lowest group would be at least at the Grade 8 level, (Table 1).

---

[1] Dunn and Bradstreet, The Financial Post, June 16, 1962, p. 5. This report indicates that 41.9 per cent of business failures are due to incompetence, 36.1 per cent to lack of managerial experience, 21 per cent to unbalanced operations, lack of experience below the managerial level, disaster, fraud or neglect and one per cent to unknown causes.

[2] The survey included 61 Ontario farmers who were war veterans. Within the restrictions that the sample excluded farmers living in southern and northwestern Ontario, included only war veterans established through the Veteran's Land Act Administration during the years 1946 to 1949 inclusive, included only those farmers for which 1958 farm appraisal records were available and included only farmers who said they were making more money from farm operations than from other sources—the sample was randomly selected.

[3] Based on farm appraisals made at time of settlement and again in 1958.

Table 1.—Age of Operators, Education Levels and Family Size by Management Groups

	Average per management group						
	Upper $\frac{1}{4}$	Upper $\frac{1}{3}$	Upper $\frac{1}{2}$	Lower $\frac{1}{2}$	Lower $\frac{1}{3}$	Lower $\frac{1}{4}$	Total sample
Age of operators[a]	41.3*	41.8**	41.3**	44.8	46.3	47.1	43.0
School grade of operators[b]	9.7**	9.5*	9.4*	8.0	8.1	8.0	8.7
Additional training of operators[c]	0.5	0.5	0.4	0.1	0.1	0.0	0.2
School grade of operators' wives[b]	10.7	10.6	10.9	10.0	9.6	10.0	10.4
Additional training of operators' wives	0.7	0.9	0.9	0.2	0.2	0.1	0.6
Total training of operators and their wives	21.5**	21.4*	21.5*	18.2	17.9	18.2	19.9
Number of children per family[d]	3.7	4.0	3.6	3.4	3.9	4.2	3.5

[a] Relatively narrow range due to sampling restrictions.

[b] Grade when last in school.

[c] Length of additional training or courses expressed in terms of a ten-month school year. Excludes special training taken while in the armed forces.

[d] Sample included two bachelors and two widowers, one of the latter having children. Sample average, therefore represents 58 families instead of 61.

*Significant at the .01 level or greater. In the first case shown, the test was to discover whether there was a significant difference between the 41.3 in the upper one-quarter group and the 47.1 in the lower one-quarter group.

**Significant at the .05 level or greater. In the first case shown, the difference tested was between the 41.8 of the upper one-third group with the 46.3 of the lower one-third group.

Farm Background, Experience and Land Use.—While the study indicated that the more highly rated managers tended to have slightly more farming experience than others, the differences between groups so far as farm experience was concerned were not significant. As may be seen in Table 2, the more highly rated management groups included a higher proportion of farmers not raised on farms: However, more of these farmers' wives had been raised on farms than was the case with farmers' wives in the lower rated groups. Although the average increase in farm size rose for all groups, the differences were not found to be significant at the .05 level. The number of acres which the upper three groups had in grain crops were, however, found to be significantly greater than the number of acres which the lower three groups had in crops. Much the same situation prevailed for land that was used both for hay and pasture.

The data in Table 3 supply a statistical comparison of changes in farm size and in the use made of the land between the group of farmers who had no farming experience and the group who had had such experience before they began farming.

Table 2.—Relationships of Farm Background, Farm Experience Farm Size and Use of Land to Managerial Ability

	Average per management group						
	Upper $\frac{1}{4}$	Upper $\frac{1}{3}$	Upper $\frac{1}{2}$	Lower $\frac{1}{2}$	Lower $\frac{1}{3}$	Lower $\frac{1}{4}$	Total sample
Per cent of operators raised on farms	66.7	75.0	77.4	86.7	85.0	86.7	82.0
Per cent of operators' wives raised on farms	73.3	80.0	73.3*	55.6	58.6	53.8	64.9
Average number of years of farm experience	13.5	13.4	13.3	12.7	12.5	12.3	13.0
Average number of acres when farming began	161	157	154	137	144	150	146
Acres as of Jan. 1, 1960	207	212	202	166	169	172	184
Increase in acres	46	55	48	29	25	22	39
Acres in grain crop	54*	58*	52**	36	35	33	44
Acres in pasture	59	54	49	49	57	59	49
Acres hayed and pastured	70*	67*	62	50	46	47	56
Waste or woodland	24	34	38	30	31	33	34

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

Table 3.—Comparison of Farm Size and Use Made of Land by 49 Farmers Who Had and 12 Farmers Who Did not Have Prior Farming Experience

	Acres when farming began	Acres as of Jan. 1, 1960	Increase in acres	Acres in crops	Acres pastured only	Acres hayed and pastured	Acres in waste or woodland	Increase in net worth	Net worth when farming began[a]
No prior experience.......	151	158	7[b]	46	29*	50	33	10.3*	4.7
With prior experience.....	144	191	46	54	54	58	35	13.9	5.0

[a] Net worth in thousands of dollars.
[b] Not significant due to extremely high variability and smallness of one group.
*Significant at .01 level or greater.

While the data in Table 2 indicated that there were a higher proportion of the farmers in the three upper management groups who were not raised on farms than in the lower three groups, the data in Table 3 indicate that the operators who had no prior farm experience did not expand their farm acreage as much as other farmers. It may be, therefore, that while managerial ability does not depend solely on previous farm experience, this same experience may be closely associated with the recognition of the need for the expansion of farm operations.

Farm Operating Expenditures, Living Costs and Value of Farm Perquisites.—Farm operating expenditures ranged from $1,038 to $15,329 per farm per year. Strange as it may seem, the two operators who reported these figures were in the upper one-quarter group. The expenditures of $1,038 was lower by over $4,000 than for any other operator in this group. This fact may lead the reader to assume that this individual was overassessed, when rated as a manager. However, a review of other information obtained indicates that the rating was probably warranted. It must be pointed out, that more attention was given to various types of potential ability than to past achievements and the current situation. Living costs ranged from just over $800 to well above $3,000 per year per farmer. The value of perquisites ranged from $444 to almost $2,400 per year per farmer. The data in Table 4 supply a comparative picture of average farm operating expenditures, farm living costs and value of farm perquisites for the various management groups.

Table 4.—Farm Operating Expenditures, Living Costs and Value of Perquisites per Management Group

	Average per management group						
	Upper ¼	Upper ⅓	Upper ½	Lower ½	Lower ⅓	Lower ¼	Total sample
	—dollars per year—						
Farm operating expenditures[a]	8,112*	8,331*	7,098*	3,178	2,980	2,507	5,170
Farm living costs[b]...........	2,699	2,669*	2,485*	1,795	1,669	1,541	2,146
Total farm expenditures......	10,811*	11,000*	9,583*	4,973	4,649	4,048	7,315
Value of perquisites[c].........	1,739*	1,696*	1,495**	1,251	1,218	1,149	1,375

[a] A large number of farmers supplied data from copies of their previous years' income tax returns. In other cases, previous years' operating expenditures were estimated by the farmers at the time of the interview on an item-to-item basis.
[b] Estimated on an item-to-item basis at time of interview. Does not include fuel, electricity, fire and life insurance costs.
[c] Includes value of home-grown food at retail prices and the farmers' estimates of the rental value of their homes in their present condition if they were situated in a nearby town or city.
*Significant at the .01 level or greater.
**Significant at the .05 level or greater.

The breakdown of average living cost into itemized living costs per family and especially into itemized living costs per person per group facilitates comparison between the various management groups. The data in Table 5 show the major living costs per family per management group and also the average item cost per person per management group where such a breakdown is feasible for analysis purposes.

Regardless of the amount and quality of land, labor and capital on a farm, efficient management is needed to develop and maintain a profitable economic unit. Even where either land, labor or capital are in short supply of where unforeseeable circumstances have resulted in inadequate returns, some of the distinguishing features of potential managerial ability are discernible by the efforts made to obtain reliable information which may have some potential in solving current or future farm problems. The activity displayed to obtain such information may consist for example, of discussions with successful farmers, the selective use of government extension services, attendance at farm meetings or by accepting responsibility in community affairs and thus providing a contact with other farmers and businessmen. The activity of farmers' wives may also give some indication of the amount of reliable information obtained in the

Table 5.—Farm Home Living Costs and Value of Perquisites, per Family and per Person, per Management Group[a]

Cost items[b] or perquisites[c]	Average per management group						
	Upper $\frac{1}{4}$	Upper $\frac{1}{3}$	Upper $\frac{1}{2}$	Lower $\frac{1}{2}$	Lower $\frac{1}{3}$	Lower $\frac{1}{4}$	Total sample
	—dollars per year—						
Purchased food per family	1,060*	1,069*	989*	764	697	637	878
Purchased food per person	185*	175*	174*	155	138	124	165
Home-grown food value per family	583	603	544	493	518	545	519
Home-grown food value per person	102	99	96	100	103	106	98
Total value of food per family	1,643*	1,673	1,533	1,257	1,215	1,182	1,397
Total value of food per person	287	274	270	255	241	230	263
Clothes per family	427*	411*	383*	244	234	219	315
Clothes per person	78**	73*	71*	54	52	49	64
Health per family	229	224	217	156	163	171	187
Health per person	42	40	40	35	36	38	38
Entertainment, gifts and holidays per family	244*	223*	206*	96	77	62	152
Entertainment, gifts and holidays per person	45*	39*	38*	21	17	14	31
Education per family	6	11	9	7	4	5	8
Education cost of families reporting such costs	24	32*	27	21	16	16	24
Minor household equipment and replacement per family	63*	61*	55*	37	31	29	46
Major household equipment and replacement per family	216*	214*	197**	155	131	114	177
Yearly expenditure on house per family	161*	150*	147**	99	106	74	123
Total maintenance on house and equipment	440*	425*	399*	291	268	217	346
Non-farm business car costs (one-third of total)	292	306	282	237	226	229	260
Total living cost per family	2,698*	2,669*	2,485*	1,795	1,669	1,541	2,146
Total living cost per person	471*	438*	438*	364	330	300	404
Rental value of home	1,157*	1,093*	951**	758	700	604	856
Value of home-grown food	583	603	544	493	518	545	519
Total value of perquisites	1,739*	1,696*	1,495*	1,251	1,218	1,149	1,375
Value of perquisites per person	303*	278*	263	254	241	224	259

[a] Does not include expenditures on fuel, electricity, fire and life insurance. May not include all expenditures of a charitable nature, and expenditures on alcoholic beverages or cigarettes.

[b] In most cases, costs per person were worked out in detail, e.g. cost of clothes and health costs for the previous year. Major household equipment costs and yearly expenditure on the home were obtained by adding all such costs since farming began and dividing by number of years farming. Since such expenditures appear to vary greatly with the variableness of income, the averages obtained in this manner may be more representative of annual costs than averages for a specific year.

[c] Includes value of home-grown food and rental value of home.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

home and the amount of business ability that the wives possess. Wherever farmers or their wives have been elected to some responsible position in the community it is probable that many of these abilities are directly or indirectly related to farm managerial ability. Because of this, the various activities and views of farm operators and their wives which are associated with the acquiring of new knowledge or the acceptance of responsibility are now related to levels of managerial ability.

Farmers' Evaluation of Sources of Information.—Two approaches were used to find out how farmers valued numerous sources of information. In both cases, 24 sources of information were listed. In the first approach, the interviewer named each source of information and then asked each farmer whether the information obtained from this source was, (1) of no use, (2) occasionally useful, (3) frequently useful or (4) always useful in helping to solve his farm production, marketing, or organizational problems. In the second approach, each farmer was given a prepared form listing the 24 sources of information and was requested to place these sources in order of importance to him and to mail in the completed form. The first approach guaranteed that evaluation would be made on all listed information sources but at the same time restricted each evaluation to one of four possible answers. The second approach allowed each operator time to consider and change his ranking, but resulted in some operators not replying and others who did not fully complete the form. Both approaches, therefore, had weak as well as their strong points. The second approach probably reflects farmer opinion most accurately.

The twenty-four sources of information listed were as follows: (1) wife, (2) children, (3) neighbors or friends (4) an ordinary (average) farmer, (5) an outstanding successful farmer, (6) farm papers, (7) government publications, (8) government agricultural representatives or agricultural college personnel, (9) Veterans' Land Act fieldmen or supervisors, (10) agricultural college or university publications, (11) co-operative publications, (12) agricultural radio programs, (13) agricultural television programs, (14) market report publications, (15) farm records, (16) bank managers, (17) farm meetings, (18) fairs, field days or demonstrations, (19) company advertisements (20) machinery dealers and salesmen, (21) fertilizer dealers and salesmen, (22) seed supply dealers and salesmen, (23) feed supply dealers and salesmen, (24) livestock dealers and salesmen.

In the first approach, the evaluations given were converted to numerical figures using the following weighting for the four possible answers, (1) of no use, 0; (2) occasionally useful, 1; (3) frequently useful, 2; (4) always useful, 3. In most cases the evaluations were made in the presence of the operators' wives and resulted in an evaluation of the first source of information as being always useful. Because of the later insistence by many operators that they had over evaluated this source in relation to other sources of information the first information source was deleted because of the bias involved. In the second approach, however, the first information source was retained and as the findings in Table 7 indicate the deletion in the first approach was probably justified.

The statistical data resulting from the first approach are shown in Table 6. Several features are of particular interest in this table, the first dealing with the relatively high ranking of information source numbers 3 and 4 by the lower one-quarter group compared to rankings on these sources by other groups, the second deals with the relatively high rankings of source numbers 5 and 8 by the upper one-quarter group compared with rankings on these sources by the lower one-quarter group, and the third shows the decrease in positive answers or an increase in negative answers (of no use) as managerial ability group levels decreased.

Table 6.—Order of Importance of 24 Sources of Information to Farmers By Management Groups. Each Source evaluated as being (1) of no use, (2) occasionally useful, (3) frequently useful or (4) always useful. Weighting given these responses 0, 1, 2 and 3 respectively

Source number[a]	Average value to[c] upper ¼	Source number	Average value to upper ⅓	Source number	Average value to upper ½	Source number	Average value to lower ½	Source number	Average value to lower ⅓	Source number	Average value to lower ¼	Source number	Average value to total sample
1[b]	—	1	—	1	—	1	—	1	—	1	—	1	—
8	2.13	5	2.10	5	2.06	6	1.90	6	1.90	4	1.93	5	1.95
5	2.00	8	1.95	6	1.94	5	1.83	5	1.85	3	1.93	6	1.92
15	2.00	6	1.90	15	1.84	12	1.77	12	1.80	12	1.87	12	1.79
6	1.87	15	1.80	12	1.81	9	1.70	9	1.65	9	1.87	15	1.67
12	1.73	12	1.75	8	1.77	15	1.50	15	1.35	15	1.47	9	1.56
18	1.53	18	1.55	18	1.48	8	1.30	8	1.10	6	1.20	8	1.54
10	1.47	9	1.40	9	1.42	18	1.17	18	1.10	8	1.20	14	1.51
9	1.40	10	1.40	7	1.35	4	1.00	4	1.00	18	1.13	18	1.31
14	1.40	17	1.30	10	1.35	7	0.97	7	1.00	14	1.13	7	1.16
17	1.40	7	1.30	14	1.29	3	0.93	22	0.95	5	1.00	10	1.05
7	1.40	13	1.30	17	1.19	17	0.90	3	0.90	7	1.00	17	0.98
16	1.13	14	1.20	16	1.00	14	0.87	14	0.90	22	1.00	4	0.93
4	0.87	16	1.10	4	0.87	22	0.87	16	0.85	2	1.00	3	0.89
3	0.87	3	0.90	13	0.87	10	0.71	10	0.85	16	0.87	13	0.82
22	0.80	4	0.90	3	0.84	13	0.70	17	0.70	10	0.80	16	0.77
23	0.80	22	0.75	2	0.58	16	0.60	13	0.65	23	0.67	22	0.72
13	0.80	21	0.70	22	0.55	2	0.60	23	0.60	17	0.60	2	0.54
21	0.67	2	0.70	21	0.55	23	0.53	2	0.50	13	0.53	23	0.52
2	0.60	23	0.65	11	0.55	21	0.43	21	0.45	21	0.47	21	0.49
11	0.53	11	0.65	23	0.52	11	0.10	11	0.10	11	0.07	11	0.33
20	0.20	20	0.15	19	0.13	19	0.07	24	0.10	20	0.07	19	0.10
19	0.07	19	0.10	20	0.10	20	0.07	20	0.05	24	0.07	20	0.08
24	0.07	24	0.05	24	0.06	24	0.07	19	0.05	19	0.00	24	0.07
Average 23	1.12		1.11		1.05		0.90		0.89		0.95		0.99
Per cent positive answers	69.9*		68.3*		64.9*		56.7		56.7		56.2		60.9
Average positive answers	16.1*		15.7*		14.9*		13.0		13.0		12.9		14.0

[a] Information source numbers as given in article.
[b] Average value is the average of the weighted response answers.
[c] Information source number 1 was deleted due to evidence of biased answers.
*Significant at the .01 level or greater.

Table 7.—Order of Importance of 24 Sources of Information as Rated by Farmers in the various Management Groups

Source number[a]	Average value to[b] upper ¼	Source number[a]	Average value to[b] upper ⅓	Source number[a]	Average value to[b] upper ½	Source number[a]	Average value to[b] lower ½	Source number[a]	Average value to[b] lower ⅓	Source number[a]	Average value to[b] lower ¼	Source number[a]	Average value[b] to total sample
6	278	6	360	6	486	6	420	6	260	6	176	6	906
8	275	1	359	1	467	3	376	3	255	9	164	3	774
1	268	8	345	8	431	9	368	9	226	3	158	1	766
7	248	12	310	14	406	12	341	12	225	7	138	8	751
12	238	5	298	3	398	8	320	7	216	12	131	9	734
3	234	7	296	15	388	1	299	8	204	4	128	12	728
14	226	14	291	12	387	15	295	15	196	8	128	15	683
15	214	3	284	7	384	4	286	5	188	5	112	7	667
9	212	9	281	9	366	7	283	4	176	15	111	14	635
5	198	15	279	5	347	5	264	1	171	1	101	5	611
4	197	4	248	4	314	2	258	13	166	13	94	4	600
17	173	17	229	18	301	13	246	2	137	2	87	2	524
18	157	18	203	17	293	14	229	14	133	16	71	18	496
2	156	2	188	2	266	18	195	17	108	19	60	17	481
16	143	16	180	16	259	17	188	16	107	17	56	13	472
13	139	13	171	13	226	16	156	19	105	18	55	16	415
11	95	11	141	19	190	19	150	18	101	23	55	19	340
19	88	19	111	11	185	22	149	23	85	14	52	11	296
22	83	23	106	21	132	23	131	22	80	22	46	22	275
23	82	22	105	22	126	21	128	11	72	11	45	21	260
20	76	21	98	20	117	10	114	10	60	21	44	23	244
21	68	20	87	23	113	11	111	21	59	10	42	10	219
10	63	24	85	10	105	20	75	24	48	24	36	20	192
24	56	10	82	24	103	24	73	20	43	20	24	24	176
Total value of group ratings	3,967		5,137		6,790		5,455		3,421		2,114		12,245
Total value of unrated sources	233		263		410		1,145		779		586		1,555
Total possible value of ratings	4,200		5,400		7,200		6,660		4,200		2,700		13,800
Value of ratings per person	283.3*		285.4*		282.9*		248.0		244.4		234.9		266.2
Value of uncompleted ratings	16.6*		14.6*		17.1*		52.0		55.6		65.1		33.8
Per cent sending in replies	93.3		90.0		77.4		73.3		70.0		60.0		75.4
Per cent of ratings completed	94.5*		95.1*		94.3*		82.7		81.5		79.4		88.7

[a] Source number refers to the number given to each of the 24 sources of information (see text).

[b] Values were given according to the ranking given a source of information. If farm papers for example were ranked in first position this source received 24 points by all placing farm papers in this position. If a farmer placed farm papers in twelfth position 12 points were allotted or if in the twenty-fourth position one point was allotted. Total average value is therefore the total number of points allotted to an information source divided by the number of farmers returning forms.

*Significant at the .01 level or greater.

In the second approach, the rankings given to each source of information by each farmer were numerically evaluated by giving a weighting of 24 for the first listed source, 23 for the second listed source and so on until the last listed of the 24 sources received a weighting of 1. The data presented in Table 7 indicate the number of points attributed to each source of information for each management group and for the total sample. Since the number of forms returned decreased as management ability decreased and since the number of ratings completed on each form decreased as managerial ability decreased, the total value of group ratings are only comparable when averaged on the basis of the number sending in replies. Two features in Table 7 are especially noticeable, (1) the predominant ranking of source No. 6 by all groups, (2) the ranking of information source No. 1 by the upper one-quarter and one-third groups compared to the ranking on this source by the lower one-quarters and one-third groups. (3) The major consideration to be given the data in Table 7 is whether or not the sources of information thought most important by the lower one-quarter group are usually less reliable and useful in helping to solve management problems than are the sources of information thought most important by the upper one-quarter group.

The data in Tables 6 and 7 reflect what farmers think about the value of various sources of information. The data in Table 8 reflects measureable actions of farmers and are related to the holding of responsible positions, to keeping up with new knowledge and ideas, or a combination of both. In studying managerial ability it is probable that the number of elected positions that have been held by an individual should be closely studied. These positions regardless of whether or not they are associated with farming do at least reflect the fact that the individual has been elected by this community because of leadership ability, thinking ability or knowledge which he possesses. In Table 8 the data indicate the extent of the activity carried out by management groups. Most of the activities are either directly associated with the use made of farm information sources or are activities which bring farm people together and thus provide a means of information distribution.

Table 8.—Use Made of Sources of Information, by Management Groups

Information source or activity	Management group						
	upper ¼	upper ⅓	upper ½	lower ½	lower ⅓	lower ¼	Total sample
	—average or per cent per group—						
Per cent of operators who have made special trip to see ag. rep. or ag. college personnel.	93.3*	85.0	77.6	60.0	50.0	33.3	68.9
No. of times ag. rep. or ag. college personnel consulted since farming began	36.4*	30.6*	22.7*	5.8	4.4	4.8	14.4
Average no. of times a year ag. rep. or ag. college personnel consulted	2.9*	2.5*	1.9*	0.5	0.4	0.4	1.2
No. of daily newspapers per operator	1.2	1.3	1.3	1.0	1.1	0.9	1.2
No. of farm papers	3.3**	3.5*	3.2**	2.3	2.1	2.1	2.8
No. of womens magazines or other general periodicals	2.6*	2.5*	2.0*	1.0	0.9	0.6	1.5
Total no. papers or periodicals per family[a]	7.1*	7.2*	6.5*	4.3	4.1	3.6	5.4
Farm meetings per operator	9.4*	8.3	6.2	2.3	2.5	1.7	4.3
Farm meetings per housewife	1.9	1.9	1.5	1.0	1.0	1.3	1.3
Total farm meetings per family	11.3*	10.2**	7.8**	3.4	3.6	3.1	5.7
School meetings per operator	3.8**	3.4	4.7	1.7	1.9	1.9	3.2
School meetings per housewife	1.7**	1.7	1.1	1.6	0.4	0.5	1.4
School meetings per family	1.5**	5.1	5.9	3.3	2.4	2.5	4.6
Church business meetings per operator	7.1**	8.6*	5.8**	1.2	1.1	1.4	3.5
Church business meetings per housewife	7.8*	7.9	6.9	5.2	2.9	3.3	6.1
Total church business meetings per family	14.9**	16.5	12.7	6.2	3.9	4.6	9.5

Table 8.—Use Made of Sources of Information, by Management Groups—continued

Information source or activity	Management group						
	upper ¼	upper ⅓	upper ½	lower ½	lower ⅓	lower ¼	Total sample
	—average or per cent per group—						
Community meetings per operator	2.6**	2.7*	2.3**	0.5	0.3	0.3	1.4
Community meetings per housewife	7.3**	6.1	4.2	2.6	0.9	1.0	3.5
Community meetings per family	9.9**	8.8	6.5	3.0	1.1	1.3	4.8
Total meetings per operator per year	22.9**	22.9**	19.0*	5.6	5.1	5.4	12.4
Total meetings per housewife	18.7**	17.5*	13.8**	10.5	5.2	6.1	12.2
Total meetings per family membership in non-compulsory organizations	41.6*	40.4*	32.1*	15.1	10.1	10.7	24.7
Number per operator	2.8*	2.7*	2.2*	0.6	0.5	0.5	1.4
Number per housewife	1.6**	1.6	1.2	0.6	0.5	0.5	0.9
Total membership per family	4.4*	4.3*	3.3*	1.2	1.0	1.1	2.3
Per cent of operators who have held executive positions	73.3*	70.0*	61.3**	30.0	20.0	13.3	45.9
Per cent of housewives who have held executive positions	53.3**	60.0*	46.7	22.2	5.9	7.7	33.3
Per cent of operators and wives who have held executive positions	63.3*	65.0*	54.1*	24.6	13.5	10.7	39.8
Number of executive positions held by operator	1.9*	1.7*	1.4**	0.7	0.3	0.3	1.0
Number of executive positions held by housewife	0.7*	0.8*	0.6	0.3	0.2	0.2	0.4
Average number of executive positions per family	2.7*	2.5*	1.9	1.0	0.5	0.5	1.5
Per cent of operators who have written to the following information sources in last two years.							
Prov. Dept. of Agriculture	47	40	35	17	20	20	21
Ag. Rep. or Ag. College personnel[b]	80*	75**	61**	27	30	30	44
Canada Dept. of Agriculture	27	35**	26	7	10	13	16
Dept. of Veterans Affairs	40	45	39	20	20	20	30
County or District Home Economist	20	15	13	0	0	0	7
Information from all five sources	40	39	33	14	16	15	24
Per cent of operators who have or have had extension publications on:							
Family health	73.3	75.0*	76.7	50.0	35.0	33.3	63.3
Veterinary problems	46.7	45.0	51.6	33.3	35.0	33.0	42.6
Insect control	33.3	25.0	41.9**	13.3	10.0	6.7	27.9
Weed control	80.0**	75.0**	80.6*	40.0	30.0	33.3	60.7
Crop production	86.7*	85.0*	87.1*	53.3	50.0	40.0	70.5
Marketing of farm products	33.3*	30.0**	25.8*	10.0	10.0	6.7	18.0
Beef production	33.3**	35.0*	35.5*	10.0	10.0	0.0	23.0
Swine production	26.7**	40.0	41.9**	23.3	35.0	26.7	32.8
Sheep production	0.0	5.0	6.5	3.3	5.0	6.7	4.9
Poultry production	66.7*	70.0*	58.1**	26.7	10.0	6.7	42.6
Dairying	66.7	70.0	74.2	53.3	45.0	46.7	63.9
Farm home information	61.5	58.8	57.1	34.6	27.8	30.8	41.0
Total	50.6*	51.1*	53.0*	29.2	25.2	22.5	41.3
Total, deleting family health	47.9*	48.2*	50.4*	27.0	24.1	21.2	38.9
Total, deleting family health and farm home information	47.3*	48.0*	50.3	26.7	24.0	20.7	38.7
Veterinary problems, insect and weed control combined	53.3*	48.3**	58.1*	28.9	25.0	24.4	43.7
Per cent of publications obtained by:							
Writing to V.L.A.	15.4	22.2	20.7	10.7	5.3	0.0	15.8
From V.L.A. but not requested (mostly one publication)	93.3	90.0	87.1	82.1	89.5	85.7	84.7
Obtained from Ag. Rep. office or at farm meetings	76.9**	72.2**	72.4**	39.5	33.3	23.1	56.4

[a] Family in this table refer only to the operator and his wife.

[b] Including telephone calls.

*Significant at the .01 level or greater.

**Significant at the .05 level or greater.

The data that has been presented in Tables 1, 2, and 8 all show past experiences or activities of the farmers in each management group. In nearly all cases, a statistical comparison of the group data indicate that activities which tend to increase the fund of reliable knowledge possessed by farm managers tends to increase as managerial ability increases. This, of course, is to be expected since the modern farmer like his counterpart in other businesses must attempt to keep up with new ideas and new information if he hopes to maintain an economic farm unit.

ORGANIZATION CHANGES OF ONE-SECTION FARMS ON SCEPTRE HEAVY CLAY SOILS BETWEEN 1947 AND 1961

J. ZEMAN

Saskatchewan is now able to draw on a long history of research work in farm organization and management. The work of the Department of Farm Management of the University dates as far back as 1922 and that of the Regional Office of the Economics Division to 1935.

We may now avail ourselves of this rich experience to depict the changes that have occurred in Saskatchewan farming. In this article, for example, we shall review some of the changes in farm organization on one-section farms on Sceptre heavy clay soils. A study made by the Economics Division in 1947 covered an area of 20 municipal units, part of which consisted predominantly of Sceptre heavy clay soils[1]. Another study[2], in 1955, was solely concerned with grain farms on the same type of soils. This study was repeated in 1961[3], on a modified basis. We shall supplement the findings from these three studies with Census data, to trace developments from 1947 to 1961.

Of 421 business records collected in 1947, on farms of all sizes in the Fox Valley-Eston-Kindersley area, we have selected 25 one-section farms, on Sceptre heavy clay soil, for a comparative analysis with 25 other records, from farms of the same size and soil type, collected in 1955, and 25 others in 1961. In each case the group of 25 farms can be considered as reasonably representative sample of one-section farms on Sceptre heavy clay soil.

Settlement of Saskatchewan took place with spectacular suddenness between 1906 and 1916. The total number of farms doubled and the total population more than tripled. Population reached a peak level in 1936 and then declined steadily until 1951. The total population then dropped to almost the figure of a quarter of a century earlier. Since 1951, however, there has been a slow upward climb.

In each of the three studies used as background material for our review, four municipalities receive some attention. These are the R.M. of Miry Creek No. 229, organized January 1, 1913; R.M. of Clinworth No. 230, organized December 9, 1912; R.M. of Happyland No. 231, organized January 1, 1913; and the R.M. of Royal Canadian No. 261, organized December 9, 1912.

Some census material has been compiled for these four municipalities and the whole province to portray the changes between census intervals. Developments in these four municipalities are probably typical of developments throughout the southwest part of the province. The peak in population was reached about 1921 and a steady decline has taken place since then. The decline was rather slow till 1936, but accelerated between 1936 and 1951. Since 1951, it has slowed down again. The population of these four R.M.'s in 1956 was only slightly more than one-third of the 1921 total.

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[1] Riecken, T. O. and M. E. Andal. A Farm Business Study in the Fox Valley-Eston-Kindersley Area of Saskatchewan, 1952.

[2] Some Organization Aspects of Prairie Grain Farms on Sceptre Heavy Clay Soil, the Brown Soil Zone, Saskatchewan, 1955. The Economic Annalist, June 1958.

[3] Changes in Farm Organization on Prairie Grain Farms on Sceptre Heavy Clay Soils of the Brown Soil Zone, 1961 Phase—Not available for general distribution.

Farm numbers reached a high point of 1,975 in 1931 and have since then been declining. By 1956, they had decreased to 1,275 which is only about 65 per cent of the 1931 total.

Description of the Survey Area.—The survey area has a rather large acreage in Sceptre heavy clay, and clay soils.

Table 1.—Population Trends in Four Selected Municipalities of Southwestern Saskatchewan

R.M. No.	Total population							
	1921	1926	1931	1936	1941	1946	1951	1956
229	2,003	1,759	1,879	1,717	1,471	1,055	837	789
230	1,863	1,822	1,796	1,669	1,472	1,193	764	679
231	4,185	3,587	3,383	3,277	3,002	2,073	1,423	1,286
261	1,086	1,082	1,274	1,099	929	830	641	683
Total	9,137	8,250	8,332	7,762	6,874	5,151	3,665	3,437
Total for Saskatchewan	757,510	820,738	921,785	931,547	895,992	832,688	831,728	880,665

SOURCE:—Census of Canada.

Table 2.—Changes in Number of Farms in Four Selected Municipalities of Southwestern Saskatchewan

R.M. No.	1921	1926	1931	1936	1941	1946	1951	1956
229	559	537	503	481	465	421	345	298
230	474	473	455	389	395	367	304	289
231	673	636	731	722	680	650	573	486
261	248	240	287	293	279	287	233	202
Total	1,954	1,886	1,975	1,885	1,819	1,725	1,455	1,275
Total for Saskatchewan	119,451	117,781	136,472	142,391	138,713	125,612	112,018	103,391

SOURCE:—Census of Canada.

> "The Sceptre Association consists of heavy textured soils developed on uniform clay deposits occupying the beds of former glacial lakes. Over two million acres have been mapped in this association. The soil landscape of the Sceptre Association is easily recognized. It is characterized by the following features: smooth topography, nearly level in most areas, and in others rising in long, moderately undulating slopes to broadly rolling uplands; a high percentage of arable land consisting of large, mechanized grain farms, chiefly under wheat or summerfallow; and a greater proportion of well developed farmsteads than is usually seen on the brown soils.
>
> The Sceptre soils have a good surface drainage except in local flat-depressional areas. Stones are rarely encountered and form no obstacle to cultivation in typical Sceptre areas.

> The Sceptre soils are the most productive types of Brown soil zone; the heavy clay is nearly equal in productive value to the best soils of the province. High drought resistance, good native fertility, and a high percentage of arable land are factors chiefly responsible for the excellent showing of the Sceptre soils."[1]

Ownership and Tenure.—A significant amount of land in the southwestern part of Saskatchewan is owned by the Province. Most of this land is in the lower land classes and is submarginal for grain growing. Some of this land has never been cultivated. Other parcels were cultivated at one time and have reverted to grass as those who tried to wrest a living from the soil abandoned large areas. As they became abandoned, the Province assumed ownership. This land, known as Crown land, has been used to establish community pastures or leased to farmers or ranchers for pasture use.

With specific reference to parcels of ScHvC soil in the survey samples between one-quarter and one-third of the parcels have been rented and between two-thirds and three-quarters of the parcels have been owner-operated.

With reference to all parcels of land in the R.M. of Clinworth No. 230, the only change has been the practically complete disappearance of company-owned land. The Hudson Bay Company has disposed of its agricultural holdings in Saskatchewan.

Table 3.—Trends in Ownership and Tenure

(a) Ownership and tenure of one-section farms in three sample surveys

Survey year	Number of farms	Quarters			Average age of operator	Average years on this farm
		Owned	Rented	Total		
1947	25	76	24	100	47.9	18.2
1955	25	65	35	100	43.4	16.4
1961	25	74	26	100	46.0	19.7

(b) Complete ownership by quarter-sections, R.M. 230 only

	1947	1961
	—per cent—	
Publicly-owned[a]	41.0	41.6
Privately-owned	57.3	58.2
Company-owned[b]	1.7	0.2
Total	100.0	100.0

[a] Municipality and Province.
[b] Hudson Bay, railway and mortgage companies.

Land Use.—Soils of the Sceptre Association are described as highly drought-resistant, very productive, with a very high percentage of arable land. Although all cereal crops are well adapted to the area, a review of land use history indicates that the most important single crop has been wheat. This includes durum wheat but no figures are available from earlier surveys to allow a measurement of its relative position. In 1961, 26.4 per cent of the cultivated acreage was in hard wheat, and 21.1 per cent of the cultivated acreage was in durum wheat. Durum wheat does very well in this area but with a limited market it cannot be grown in unlimited quantities. The particular qualities of durum which adapt it to the area are sawfly resistance and perhaps more ability to withstand drought conditions. Other crops such as flax and rapeseed enjoy temporary popularity. The seeded acreage varies with the price per bushel and the readiness with which it can be sold. Barley and oats are also grown. Oats has declined in acreage since 1946 as it is no longer needed as a feed grain for horses. Other crops are better adapted to the hot, dry growing conditions. Rye is usually grown on sandy loam soil but some rye was also grown on heavier land between 1947 and 1955 when rye prices were high.

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[1] For detailed description, see Soil Survey of Southern Saskatchewan from Township 1 to 48 inclusive, by Mitchell, J., H. C. Moss and J. S. Clayton. Soil Survey Report No. 12, College of Agriculture, University of Saskatchewan, Saskatoon, Saskatchewan, June 1944.

With the explosion in livestock population there should be a shift in land use. It is, in fact, imperative that this take place if the permanency of the livestock industry is to be assured. During the years when horses formed the main source of farm power, poorer uncultivated land was used for pasture and better cultivated land for growing oats for horses. When tractors displaced horses, the use of both categories of this land was diverted to growing wheat and other cash crops. However, as cattle numbers increase, it would appear that marginal land is not being diverted to pasture use and feed growing purposes. Livestock farmers still gamble on the weather for feed and no adequate margin is allowed for feed insurance.

Table 4.—Land Use on One Section Farms in Three Sample Surveys

	1961		1955		1947	
	Average acres per farm	Per cent of cropland	Average acres per farm	Per cent of cropland	Average acres per farm	Per cent of cropland
Wheat	296.0	47.5	326.4	52.7	310.6	50.2
Barley	10.7	1.7	20.1	3.2	29.4	4.8
Oats	10.5	1.7	1.4	0.2	19.2	3.1
Flax	59.0	9.4	43.7	7.1	33.1	5.4
Rye	nil	—	6.8	1.1	14.2	2.3
Improved pasture	1.2	0.2	2.1	0.3	1.3	0.2
Summerfallow	246.5	39.5	219.4	35.4	210.3	34.0
Total cropland	623.9	100.0	619.9	100.0	618.1	100.0
Unimproved farmstead	10.5		19.4		17.9	
Total farm area	634.4		639.3		636.0	

Crop Yields.—The average yield[1] of wheat, in the four municipalities previously mentioned, during the 40-year period, 1921-1960, is 13.9 bushels an acre. This does not equal the long-time provincial average for the same period. However, it is significant to note that the average wheat yield for the ten-year period, 1951-1960, was 21.3 bushels an acre. Oats and barley yields were also higher for this ten-year period than for previous decades. It would appear that improved techniques of farming and development of new cereal varieties have been at least partly responsible for a trend to higher average yields over a period of time. Year-to-year fluctuations are still very pronounced.

Two of the important changes in farming techniques that have had a marked effect on crop yields in this area are the adoption of tillage methods that are better suited to the conditions, and the use of chemicals for weed control. The wide-level discer, the heavy duty cultivator, and rod and blade weeders are implements that have permitted better preparation of summerfallow which has resulted in the storage of more moisture during the summerfallow year. The use of weed sprays has resulted in higher moisture efficiency during the crop year.

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[1] Secretary of Statistics, Department of Agriculture, Regina.

Table 5.—Average Yields[a] of Wheat, Oats, Barley and Flax in Four Representative Municipalities[b] of Southwestern Saskatchewan

Period	Wheat	Oats	Barley	Flax	Average wheat yields, three survey years[c]
	—bushels per acre—				
1921–30	15.6	30.7	17.9	[d]	16.4
1931–40	9.2	16.8	12.5	[d]	12.1
1941–50	9.6	18.7	14.5	[d]	14.0
1951–60	21.3	41.8	30.4	[d]	21.3
1921–60	13.9	27.0	18.8	[d]	16.0
1961	8.2	17.2	14.5	6.2	10.6

[a] Data supplied by the Secretary of Statistics, Department of Agriculture, Regina.
[b] Mean average for R.M.'s 229, 230, 231 and 261.
[c] Average for 1947, 1955 and 1961 survey records.
[d] Information not available.

Three varieties of wheat, Thatcher, Rescue, and Chinook, have dominated the wheat acreage in southwestern Saskatchewan since about 1946. Thatcher was the first variety that had an impact on the area. Rescue, developed at the Swift Current Experimental Farm and released in 1946 was quite commonly grown in southwestern Saskatchewan by 1948. This variety was largely responsible for the reduction of sawfly damage in the area. Chinook, a sawfly resistant wheat, with quality characteristics similar to those of Marquis, was released in 1952. Breeding and selection work in other cereals has also resulted in the production of varieties which have qualities adapted to the area.

A summary of yield data pertaining to farms predominantly on ScHvC soil indicates an average yield of 16 bushels per acre for the 1921-60 forty-year period. This yield average has been determined from yield information obtained from farmers in the 1947, 1955, and 1961 surveys.

Livestock.—The sample of 1955 and 1961 records was drawn from farms with no or very few livestock. However, the absence or scarcity of livestock on farms of this soil type is not unusual. Livestock have been of minor importance, even before 1947, on farms which are of predominantly heavy clay texture.

Unless these operators have land of poor quality available for pasture, they are not too interested in livestock as a supplementary enterprise. Preferable alternatives are to increase the size of their unit, obtain off-farm employment, or remain relatively unemployed during the winter.

Table 6.—Average Numbers of Livestock on One-Section Farms in Three Sample Surveys

Year	Cattle			Hogs		
	Farms with	Number of cattle	Total cattle	Farms with	Number of sows	Total hogs
1947	17	1.4	3.3	7	0.3	1.8
1955	11	1.0	2.3	8	0.2	1.8
1961	7	1.0	2.3	6	0.2	1.9

Machinery and Equipment.—From the report on the 1947 survey we read,

> "Of the 417 farms enumerated 11 per cent had no tractors, 77 per cent had at least one-quarter share in a tractor and had fewer than four horses, and the remaining 12 per cent had at least a one-quarter share in a tractor and four or more horses. Tractors provided a large part of the power requirements on 95 per cent of the farms. Horses provided the major source of power on about five per cent of the farms and a significant amount on an additional 17 per cent of the farms".

By 1955, all farms in the area were using tractor power. Since then there has been a change-over from gasoline tractors to diesel-powered units. This change is more evident on the larger-size farm where larger-powered tractors are required. Another change that has taken place is an increase in the size of the tractors being used. In 1947, tractors on one-section farms were nearly all three-plow size. By 1961, there was a significant number of five-plow tractors.

Combines were used for harvesting on all farms in the area by 1947. On 25 one-section farms at that time there were 23 combines. In 1955, there were 24 combines and in 1961, 21 combines on 25 farms. Swathers had increased from eight in 1947 to 23 in 1955, and declined to 20 in 1961. This change in numbers indicates a change in harvesting methods from straight combining to swathing and combining. In 1947, at least one truck was found on 23 of the farms, whereas in 1955 and 1961 there was at least one truck on each of the 25 farms.

Table 7.—Some Features of Machinery and Equipment Inventories on One-Section Farms in Three Sample Surveys

	Year of survey		
	1947	1955	1961
		—tractor—	
Number of farms with	25	25	25
Age	10.0	8.0	8.0
Size:			
3-plow	24	17	11
4-plow	nil	4	6
5-plow	1	4	8
		—Combine—	
Number of farms with	23	24	21
Age	11.0	8.0	8.0
Average size	14.0	12.5	14.0
Model:			
A.M.	18	8	3
P.T.O	3	2	3
S.P.	2	14	15
		—Truck—	
Number of farms with	23	25	25
Age	9.0	9.0	11.0
Size:			
½ ton	3	4	3
¾ ton	2	—	—
1 ton	14	17	15
1½ ton	2	2	—
2 ton	2	2	6
3 ton	—	—	1
		—Automobile—	
Number of farms with	20	21	25
Age	10.0	4.0	5.0

In 1947, the one-way disc was a common tillage machine on 24 farms. Since then the wide-level discer has replaced the one-way disc. A slight increase in ownership of cultivators and a large increase in rod weeders has taken place between 1947 and 1961. Three machines, the drill, disc-harrow and binder, which were still present on about half the farms in 1947 had practically disappeared by 1961. There were no weed sprayers in 1947 but in 1961 as many as 20 farms reported the use of these machines.

Table 8.—Comparison of Labor Inputs on One-Section Farms in Three Sample Surveys

	1947	1955	1961
Number with paid labor	20	14	6
Average number of months	5.5	1.4	1.8
Average number of months for the 25 farms	4.4	0.8	0.5
Number with unpaid labor	4	6	3
Average number of months	6.2	4.1	3.0
Average number of months for the 25 farms	1.0	1.0	0.3
Average number of months for operator	9.8	9.6	9.8
Total labor	15.2	11.4	10.6

Labor.—The amount of hired labor decreased considerably since 1947. The operator at all times has provided a high proportion of the labor necessary to operate the farm. If the operator is only allowed seven months on those farms where there are no livestock then the amount of labor provided by the operator may be said to have remained quite constant since 1947. The decrease in the amount of hired labor probably stems from the increase in the size of tractors and the use of larger implements which has decreased the amount of time required to perform necessary operations. There is also some difficulty in securing qualified hired labor, although it does appear that on a one-section farm there is need for very little hired help.

Table 9.—Comparison of Debts on One-Section Farms in Three Sample Surveys

Year	Total farms	Debt-free farms	Average debt for all farms	Average debt for farms with debt
1947	25	15	$697	1,744
1955	25	14	608	1,440
1961	25	14	1,817	4,130

Farm debt.—The average debt on Kindersley farms (all sizes) in 1930[1] was $4,500, or over $8.00 an acre. It would probably be safe to assume that the debt picture for the area included in this review was about the same at that time. During the war years and immediately after, with higher prices for farm produce, farmers were able to reduce their debts very substantially. Thus, by 1947, the average debt on farms was small. A comparative table indicates that it was possibly even smaller by 1955 and has increased significantly since then. The number of farms with debts has remained about the same between 1947 and 1961. However, the ratio between assets and debts is still favorable for the farms as a group. Over half of the total amount owing in 1961 is for the purchase of land and three farmers are carrying this debt load.

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[1] From an unpublished farm business study carried out in the Kindersley area in 1930.

A NEW PERIODICAL

The Alberta Department of Agriculture started, in December 1962, the publication of a new quarterly, the *Alberta Farm Economist.* The purpose of this periodical is to supply Alberta farmers with statistical and other information that will help them plan and readjust their operations in line with changes in the demand for and supply of farm products in markets available to these farmers.

PUBLICATIONS OF THE ECONOMICS DIVISION

Weights and Conversion Factors for Canadian Agricultural Products. Publication 1155 of the Canada Department of Agriculture. September 1962. pp. 44. Available from the Queen's Printer. Price: 30 cents a copy; a 25 per cent discount for orders of 100 copies or more.

A revised edition of a 1954 bulletin. The new edition is widened in scope and brings the data into line with present marketing practices.

Canada—Trade in Agricultural Products with the United Kingdom, the United States and All Countries, 1960 and 1961. Ottawa. October 1962. pp. 31.

The seventh in a series of annual reports on Canada's agricultural trade with other countries. The 14 statistical tables, compiled by J. A. F. Paquette of the Policies and Prices Section, describe agricultural trade in various commodities in 1960 and 1961 or supply historical summaries of that trade.

Credit Unions in Canada, 1961. Heighton, V. A. Ottawa. November 1962. pp. 18.

The last in an annual series of reports on Credit Union activities in Canada.

Canada and the United States. Tariffs on Selected Agricultural Products. Ottawa. January 1963. pp. 22.

A compilation, by J. A. F. Paquette of the Policies and Prices Section, of comparative data on customs tariffs on major agricultural products imported into Canada and the United States.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.
Sold in Canada by the Queen's Printer, Ottawa.

Agricultural Commodities and the European Common Market. FAO Commodity Policy Study No. 13. FAO, Rome, Italy, 1962.

A study of the role of major agricultural commodities under the provisions of Treaty of Rome of 1957 and of proposals to bring these provisions into effect. Part One, Some General Aspects, is organized into two sections: a) The Common Agricultural Policy of The European Economic Community, and b) The Association of Overseas Countries and Territories. Part Two consists of Notes on Individual Commodities.

United Nations Postage Stamps. All stamps from October 1957 through December 1961. U.N., New York, 1962. pp. 32. Price: $U.S. 0.50.

A booklet which brings up to date all U.N. Stamp issues. It is a supplement to an earlier and larger book (Sales No. 1957. I. 22, 85 cents) which deals with the history and postal activities of the U.N. Postal Administration and its stamp issuances from 1951 to 1957. As noted in the Introduction, all U.N. postage stamps "are reminders of mankind's desire for peace, and of the efforts needed to lay not only the political but also the economic, social and humanitarian foundations to secure and maintain that peace .... Their purpose is to spread information about the United Nations and the organizations related to it as specialized agencies, their past achievements, their present activities and their aims for the future."

Monthly Bulletin of Agricultural Economics and Statistics. Volume II, No. 12, December 1962. Food and Agriculture Organization, Rome, Italy.

This issue of the Bulletin contains an article by C. P. G. J. Smit which supplies an International Comparison of Food Consumption Data, and the usual Commodity Notes and Statistical Tables. A Special Feature, among these statistical tables, consists of a tabulation of the number of electric motors in use in agriculture in 41 countries.

OTHER PUBLICATIONS

Irrigation and Climate—New Aids to Engineering Planning and Development of Water Resources.—Olivier, Henry. Edward Arnold (Publishers) Limited. London, England. 1961. pp. vii + 250.

The author, when associated with the planning of irrigation and multiple-purpose projects for various governments, deplored the lack of "reliable and speedy methods of estimating or forecasting agricultural water needs and losses so as to facilitate rapid planning and implementation of schemes".

He later had the opportunity to carry out special studies on this subject, in association with the University of London. His book gives us the results of his studies.

Guide to Benefit-Cost Analysis.—Sewell, W. R. D., John Davis, A. D. Scott and D. W. Ross. The Queen's Printer. Ottawa. 1962. pp. x + 49. Price: 75 cents.

A Canadian Guide for the evaluation and selection of resource development projects, prepared at the request of the Secretariat of the 1961 national Resources for Tomorrow Conference and reviewed by a specially convened workshop of the conference.

This Guide draws liberally from Canadian, United States and United Nations experience, research findings, and theoretical considerations. However painstaking the authors' attempt to integrate their own views with those of other experts, they recognize the limitations of benefit-cost analysis in its present stage of development. They remind the reader, in the Introduction, that "Sight must not be lost of the fact that benefit-cost analysis, as a device for mobilizing information, is capable of considerable improvement. Definitions must be sharpened up and misconceptions in certain areas must be removed. Nor should the reader be misled by the appearance of mathematical precision. We are trying to think more logically and consistently. But most of the numbers which we employ are little more than estimates. Despite the problems of application, due in part to lack of data and the need to forecast, however, benefit-cost analysis provides the most useful framework for the evaluation of projects and programs of resource development."

Concepts, principles and methods are neatly reviewed and the reader's interest and understanding gradually built up in eight chapters that move the discussion from the strictly theoretical to the finely-woven practical aspects of benefit-cost analysis, thus making it particularly useful to those who have to make decisions bearing on resource development.

Basic Mathematics for Administration.—Parker Fowler, Jr., F. and E. W. Sandberg. John Wiley & Sons, Inc. New York and London. 1962. pp. xvii + 339.

A book that provides tools to cope with the complex problems emerging in the developing science of administration. The study of mathematics is revealed as a language eminently useful in "communicating" with and about administration problems.

A useful addition to the literature on decision theory and processes, it emphasizes the reasoning behind mathematical principles and the practical application of these principles. Originally prepared for university students, it will also render great service to older social and administration scientists who wish to understand and use mathematical concepts in their research work.

Agricultural Co-operation in Denmark and the British Farmer.—Bradley, J. and J. E. Harrison, Department of Economics (Agricultural Economics), University of Exeter, Devon, England. Report No. 131. March 1962. pp. 44. Price: 3/6.

A review of the principles of co-operation serves as an introduction to the description of Danish farming, co-operatives, educational facilities, and farmers' organizations.

An Economic Study of Pig Production in South West England.—Burnside, Estelle and R. C. Rickard, Department of Economics (Agricultural Economics), University of Exeter, Devon, England. Report No. 129. March 1962. pp. 49. Price: 3/6.

The second in a current series of reports on the economics of pig production in the counties of Cornwall, Devon and Dorset. Part I describes relevant government policies, and marketing conditions during the October 1960-September 1961 period. Part II deals with data on costs and returns and discusses some of the factors influencing price levels.

Agricultural Co-operation in Denmark and the British Farmer. Bradley, J. and J. E. Harrison. Department of Economics (Agricultural Economics), University of Exeter, 1, Courtenay Park, Newton Abbot, Devon, England. Report No. 131, March 1962. pp. 44. Price 3/6.

A study undertaken as part of the Devon Nuffield Farm Project. A small group of farmers and project officers visited Denmark to bring their views up to date on Danish agricultural co-operation. Their visit to that country was the outcome of the increasingly important role which attention to co-operative activities plays in the advisory farm programs in the Devon area.

Productive Capacity of Canadian Fisheries.—Circular No. 64, Fisheries Research Board of Canada, Biological Station, Nanaimo, B.C. A background paper, in the Fisheries series, Resources for Tomorrow Conference. June 1962. pp. II + 79.

A widened version of W. E. Ricker's background paper on *"Productive Capacity of Canadian Fisheries—An Outline"*, published in Volume 2 of the background papers prepared for discussion at the Montreal conference, October 23-28, 1961. For the benefit of conference participants, and others, statistical and other information has been extended and brought up to date.

Commercial Anemone Production in South West England, 1959-62. Cole, Helen M. and Jane N. Adkins, Department of Economics (Agricultural Economics), University of Exeter, 1, Courtenay Park, Newton Abbot, Devon, England. Report No. 132, June 1962. pp. 31. Price: 3/6.

A study of returns, inputs and margins in the commercial production of anemone crops.

The Political Significance of the British Agricultural Vote. Beynon, V. H. and J. E. Harrison. Department of Economics (Agricultural Economics) University of Exeter, 1, Courtenay Park, Newton Abbot, Devon, England. Report No. 134, July 1962. pp. 59. Price: 5/.

An examination of the political strength of the agricultural industry in the United Kingdom.

Financing the Farm Business. Rickard, R. C., H. W. B. Luxton and S. T. Morris. Department of Economics (Agricultural Economics), University of Exeter, Courtenay Park, Newton Abbot, Devon, England. November 1962. pp. IX+149. Price: 12/6.

A quotation from the Introduction to this valuable contribution to research work in farm finance will point to the tone of the analysis and of the discussion of a major problem in modern agriculture. On pages 1 and 2, the authors say that:

> "An important factor contributing to increased capital requirements has been the drive for social progress in agriculture: a desire on the part of farmers to achieve standards of living which roughly compare with the rising trend of incomes outside agriculture. The main burden of sustaining the increased income requirement has fallen on the expansion of the capital employed on the farm. In its turn, a large farm capital necessitates an ability to accumulate and manage it effectively under the difficult circumstances presented in farming. This further entails incomes which compare favourably with alternative opportunities for the managerial qualifications demanded. The large investment requirements, with their elements of greater capital risk, have in themselves required the setting up of larger reserves in the form of liquid funds to safeguard against risk and uncertainty. Incidentally, the need for these additional resources suggests that estimates frequently made of the capital requirements for farming operations err far too much on the conservative side, and that any farmer using such estimates could well find himself in serious difficulties should conditions turn out to be less favourable than was originally thought."

They have organized their report under the following chapter headings: *Capital in Theory and Practice*; *Definitions and Procedure*; *The Sample*; *Sources and Disposal of Farming Funds—A Ten Year Study of 72 Farms*; *Liabilities, Assets and Proprietors' Net Worth, 1950 and 1959;* and *Investment and Borrowing in relation to Farm Income.*

Nova Scotia General Livestock Farm Business Analysis, 1960-1961. A study of 26 General Livestock Farms. Grant, Walter V. and John M. Gates. Farm Management Division, Extension Services Branch, Department of Agriculture and Marketing. Truro, Nova Scotia. December 1962. pp. 18.

A business analysis that stresses the relative effectiveness of various practices and management factors and their influence on farm income.

Working and Living Conditions in Canada. Economics and Research Branch, Department of Labour in consultation with the Department of Citizenship and Immigration. Ottawa. 1962. pp. 77. Available from the Queen's Printer, Ottawa. Price: 25 cents.

This eleventh edition of an annual booklet supplies concise and current information on working and living conditions in Canada. It deals specifically with population, employment, earnings, working conditions, education and training facilities, living conditions, and social welfare services.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

JUNE 1963 Vol. XXXIII No. 3

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G. P. BOUCHER, Editor

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials[b]	Total	Food	
		1935-39=100						1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	263.9	290.8	235.1	130.7	126.2	186.3
1962										
Jan.	237.0	233.3	195.6	271.0	266.7	283.4	233.6	129.7	124.8	179.8
Feb.	237.1	233.6	196.4	270.8	265.7	....	....	129.8	125.0	182.5
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	184.3
April	237.4	233.7	195.4	272.0	266.1	293.1	235.8	130.3	125.8	184.1
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.0
June	240.3	243.3	200.7	285.8	272.8	....	....	130.5	125.6	186.6
July	241.3	249.6	203.7	295.6	277.7	....	....	131.0	127.0	186.3
August	242.6	238.0	171.6	304.3	262.5	295.8	236.0	131.4	128.4	189.2
Sept.	241.9	231.8	165.8	297.8	257.4	....	....	131.0	126.8	189.1
Oct.	241.7	232.1	165.9	298.2	255.9	....	....	131.5	127.2	188.8
Nov.	242.2	232.7	165.1	300.3	254.5	....	....	131.9	127.7	189.5
Dec.	242.2	230.0	167.2	292.8	253.4	....	....	131.9	127.8	189.3
1963										
Jan.	242.9	227.0	170.7	283.3	250.8	290.8	237.6	132.0	129.0	189.3
Feb.	242.7	224.1	174.3	273.8	249.8	....	....	132.1	129.4	190.7
Mar.	242.4	222.1	175.4	268.8	247.3	....	....	132.1	128.9	....
April	242.8	219.0	171.4	266.6	....	....	....	132.3	128.9	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living costs. Includes farm implements, building materials, gasoline, oil, greases, feed, fertilizer, binder twine, seed, hardware, tax rates, interest rates and farm wage rates.
1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

(b) Differs from composite index by exclusion of tax rates, interest rates, and farm wage rates.

THE ECONOMIC SITUATION

Gross National Product.—Canada's gross national product recorded a gain of eight per cent over 1961 and totaled $40,401 million in 1962. This expansion represented the largest year-to-year gain since 1956 when the economy was stimulated by an exceptionally high level of capital expenditure. Price increases were moderate in 1962 and accounted for less than two per cent of the increase in the G.N.P., leaving a gain in volume of a little more than six per cent.

All the main components of gross national expenditure contributed to the over-all increase. Consumer spending rose by more than five per cent and was a major expansionary influence, particularly in the first and last quarters of the year; purchases of durables, notably passenger cars, were especially heavy in the fourth quarter. The increase in consumer spending was accompanied by a large increase in personal income and personal saving. Investment in fixed capital resumed its upward trend; the bulk of the increased outlays was for machinery and equipment. The accumulation of business inventories made only a small contribution to expanding economic activity. The near-record crop of 1962, a contrast with the poor crop of 1961, led to a considerable accumulation of farm inventories instead of the liquidation which had occurred in the previous year. Largely as a result of the higher level of demand in the United States, exports of goods and services rose nearly eight per cent while imports also rose, but to a slighter extent. These increases reflect, in part, the lower exchange value of the Canadian dollar. Government expenditures rose considerably, especially at the provincial and municipal levels.

The salient income developments were a seven per cent rise in labor income, an 11 per cent increase in corporate profits, and a sharp expansion in accrued farm income.

Consumer Prices.—The consumer price index (1949=100) rose from 130.3 at the beginning of April 1962 and 132.1 at the beginning of March 1963 to 132.3 at the beginning of April 1963. The food component of the index remained at 128.9. Most meat prices, particularly pork prices, were lower than in March and other price declines were limited to a few items, including powdered skim milk, bananas, grapefruit, cabbage, tomatoes, and celery. These price declines were offset by higher prices for oranges, orange juice, apples, shortening, cereal and bakery items other than bread, sugar, jam, soft drinks and chocolate bars.

Wholesale Prices of Farm Products.—The general wholesale price index (1935-39=100) of vegetable products rose from 237.0 in March and 237.4 in April 1962 to 242.4 in March and 242.8 in April 1963. The index for animal products rose from 210.2 in March and in April 1962 to 222.8 in March and 224.7 in April 1963.

Farm Prices.—Continuing the downward trend in evidence since July 1962, Canada's index of farm prices of agricultural products (1935-39=100) declined to 247.3 in March from 249.8 in February. Lower prices for livestock were partly offset by higher prices for potatoes, poultry and eggs.

Commodities and Services Used by Farmers.—Canada's composite price index of commodities and services used by farmers (1935-39=100) dropped to 267.8 in January 1963 from 269.9 in August 1962, as a result of the seasonal decline in farm wages. The current index is 2.8 per cent above the January 1962 index of 260.6. Exclusive of the living component, the index dropped 1.7 per cent to 290.8 in January from 295.8 in August but rose 2.6 per cent from 283.4 in January 1962.

The farm wage rate index dropped to 567.0 in January from 602.9 in August, the index of equipment and materials used by farmers rose to 237.6

from 236.0 and the property tax and interest rate index remained at 228.0. The farm family component rose to 233.2 in January from 231.0 in August, mainly because of increases in the food and health maintenance components of 2.7 per cent and 2.6 per cent respectively.

Production and Consumption of Meats and Eggs.—The number of animals slaughtered in Canada in 1962 was estimated as follows (revised estimates for 1961 in parentheses): cattle, 2,503,600 head (2,510,900); calves, 990,100 (1,048,800); sheep and lambs, 764,600 (816,700); and pigs, 7,648,200 (7,522,100). Total dressed weight of meat production, in thousands, was as follows: beef, 1,306,878 pounds (1,302,641); veal, 121,486 (123,754); mutton and lamb, 32,648 (35,116); pork, 878,211 (966,595); offal, 95,501 (95,390); and canned meat, 88,643 (84,928). Production of lard totaled 123,515,000 pounds in 1962 and 130,191,000 pounds in 1961.

Per capita consumption of red meats was estimated at 138.5 pounds in 1962 and 138.8 pounds in 1961. Per capita consumption of various kinds of meat in 1962 (with comparative figures for 1961 in parentheses) was as follows: beef, 69.9 pounds (69.7); veal, 6.5 (6.8); mutton and lamb, 3.8 (3.6); pork, 49.9 (49.9); offal or fancy meats, 4.2 (4.5); and canned meats (carcass equivalent basis), 4.2 (4.3). Domestic disappearance of lard was 8.0 pounds per capita in 1962 and 8.4 pounds in 1961.

Poultry meat production decreased to 565,978,000 pounds in 1962 from 567,203,000 pounds in 1961 (eviscerated weight). Production of fowl and chicken meat, which represent the larger part of the total output, declined to 411,513,000 pounds from 415,387,000 pounds. The output of turkey meat rose to 147,155,000 pounds from 143,831,000 pounds and that of duck meat to 4,379,000 pounds from 4,041,000 pounds; the output of goose meat declined to 2,931,000 pounds from 2,944,000 pounds.

Per capita consumption of poultry meat in 1962 (with figures for 1961 in parentheses) was as follows: fowl and chicken, 22.9 pounds (23.0); turkey, 7.7 pounds (7.6); goose 0.1 pound (0.2); and ducks, 0.3 pound (0.3).

Dairy Products.—Milk production in March 1963 was estimated at 1,302 million pounds—0.8 per cent less than in March 1962—and the output in the January-March period at 3,503 million pounds—0.5 per cent higher than in the first quarter of 1962. Revised data place the milk output at 1,047 million pounds in February 1963 and 1,036.2 million pounds in February 1962, and at 2,201 million pounds in January-February 1963 compared with 2,174.7 million pounds in the first two months of 1962.

More creamery butter, cheddar cheese and ice cream mix but less skim milk powder were produced in April and in the January-April period of 1963 than in the corresponding month and period of 1963. The output of evaporated whole milk was lower in April but higher in the January-April period.

The output of these commodities in April, in thousands and with figures for 1962 in parentheses was as follows: creamery butter, 26,741 pounds (25,216); cheddar cheese, 8,758 pounds (7,758); ice cream mix, 1,871 gallons (1,729); evaporated whole milk, 25,257 pounds (25,602); and skim milk powder, 14,407 pounds (14,782). The January-April totals were as follows: creamery butter, 72,533 pounds (70,443); cheddar cheese, 21,788 (20,842); ice cream mix, 5,752 gallons (5,454); evaporated whole milk, 77,639 pounds (71,952); and skim milk powder, 14,407 pounds (14,782).

The production of process cheese from cheddar and other hard or cream cheese base totaled 4.9 million pounds in April, compared with 6.3 million pounds in March 1963 and 4.6 million pounds in April 1962. The output of process cheese in the January-April period totaled 22.8 million pounds, compared with 20.9 million pounds in the corresponding period of 1962.

RURAL TAXATION IN MADAWASKA COUNTY, NEW BRUNSWICK

G. C. Retson

In recent years increased attention has been focused on municipal taxation as a special problem in rural areas. While there is general complaint over high taxes, the situation varies considerably from one municipality to the next depending on the demand for municipal services and the extent of the tax base. Farmers taking part in a study conducted recently in Madawaska County, New Brunswick, listed taxation as one of the major problems in their area. In view of this, some analysis was made of tax data and their comments on various aspects of municipal taxation.

Municipal taxes have increased rapidly and in 1960 represented 10.4 per cent of cash expenses on the 116 farms included in the study. The extent of the tax increase is indicated by data provided by a farmer in the St. Andre Parish. During the 1951-60 ten-year period the tax rate on his property increased from $1.75 to $6.05 per $100 of assessment. Taxes on this farm, the real estate of which was valued at $6,900, amounted to $480 in 1960. On the basis of the current assessment this represented an increase of $342 in the annual tax bill.

Complaints over increased taxation were emphasized by farmers in border areas who noted that taxes paid on farms in the county were from two to three times those on comparable farms in the adjoining counties of Restigouche and Victoria. This comparison is further strengthened by the fact that these counties and particularly the county of Victoria contains some of the best soil types and some of the most valuable farm land to be found in the province.

While the farmer is concerned over increased costs of taxation, his major complaint is the inequities which have developed in the taxation system. One of the main points raised in this connection is that municipal taxes do not bear a fair relationship to farm income. The current system of assessment of real and personal property which provide the main base for municipal taxation was established about 100 years ago. At that time property was probably a good index of income and tax-paying ability. As this is less true today, the municipal tax load tends to bear most heavily on those types of business, such as farming, where a considerable amount of real and personal property is required.

The fact that property may not be a good index of income or tax-paying ability is indicated by data from the study. For purposes of analysis the 116 farms were classified as small-scale, part-time, or commercial, depending on the scale of operations[1]. Data in Table 1 indicate that the higher capital investment on commercial farms was associated with higher taxes but incomes on these farms were lower than on small-scale and part-time farms. The average tax bill may not appear particularly high but it should be noted that 44 of the 116 farms were small-scale or part-time farms and the average sizes of farm and income were relatively low.

Increased levels of taxation reflect increased demands for municipal services (mainly for education) and the higher costs of administering these services. Efforts to secure higher tax revenues, in many cases from stationary or declining tax bases, have involved a good deal of tinkering with the tax base as well as with the rates applied to it. The trend toward assessment at 100 per cent of property valuation, the inclusion of additional items in the category of personal property and the fact that a total of 27 separate rates were applied in computing taxes on the 116 farms are examples of this. Unfortunately, application of tax procedures is by no means uniform and as a result there is considerable inequity in the farm tax load. This poses a rather serious problem for farmers in adversely affected areas who have difficulty in passing on tax costs in the price of their products and must compete with other areas where the tax load is less onerous.

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[1] For a detailed definition of small-scale, part-time and commercial farms see Census of Canada, 1951.

As illustrated by the data in Table 2, 79.1 per cent of the average tax bill on the 116 farms was borne by land and buildings while livestock and equipment contributed 15.7 per cent of the total. Assessment on personal property which in New Brunswick includes such items as the farm car, truck and tractor, as well as livestock, is in marked contrast to procedure in many other provinces where assessment is levied almost entirely on real estate. While the use of the poll tax is more widespread it may be noted that in 1959 New Brunswick accounted for 47 per cent of municipal tax revenue derived from this source in Canada.

The variation in taxes, as shown in Tables 1 and 2, is due to the fact that the data are for two separate tax years. Data in Table 2 include assessments and taxes for the 1961 tax year as provided by the municipal office. Data in Table 1 relate to taxes paid in the 1960-61 farm business year when the tax rate was slightly higher.

Data in Table 3 provide a detailed breakdown of farm and assessed values of various types of farm capital on farms. The variation in values indicates some of the problems involved in developing an equitable system of assessments.

Variation between farm and assessed values of crop land was less than for most types of farm capital. Since assessments are levied on livestock but not on crops it was suggested that the current procedure favors the cash crop operator at the expense of the livestock producer. The variation in assessment of woodland and crop and pasture land is probably not too significant as woodland tends to be assessed in terms of long-term yields rather than on the basis of current stands of timber which on farms in the study were quite good. In discussing assessments on woodland one farmer noted that returns from woods operations on abandoned farms frequently justified investment in such property. To maximize returns, however, one had to knock down any buildings to be found on the property.

One complaint frequently raised by farmers, included in the study, was that assessments on farm barns were too high. This, it was stated, resulted from their appraisal on the basis of cubic contents rather than in terms of land improvement. Since the main purpose of many farms in Madawaska County is as a place to live there would seem to be some justification in shifting a part of the tax load from other farm buildings to the farm dwelling. An added justification for this is the fact that on many of the farms in the county improvements to farm buildings in recent years have been confined mainly to the farm home and to avoid tax increases many of these have been made on the interior rather than the exterior of the house.

Data in Table 3 indicate a considerable variation in farm and assessed values of different classes of livestock. The tax situation appears to be most favorable to swine with the assessment based only on sows and representing a lower percentage of farm value than for other classes of livestock. In contrast, poultry appears to be at a disadvantage with the assessed value at a par with farm value. Since poultry require rather expensive buildings the relatively high assessment on farm buildings places a further tax load on this enterprise. This may have some bearing on the limited development of the poultry industry in New Brunswick in recent years.

The serious nature of the tax situation is emphasized by the report of the Royal Commission appointed in 1953 to investigate financing of schools in New Brunswick. In its report the Commission states: "The tax paying ability of

Table 1—Average Farm Capital, Farm Taxes and Family Net Cash Income by Various Economic Classes of Farms, 116 Farms in Madawaska County, New Brunswick, 1961

	22 Small-scale farms	22 Part-time farms	27 Commercial farms	All 116 farms
	—dollars per farm—			
Total farm capital	6,709	7,688	13,782	11,285
Municipal taxes	162	207	294	253
Family net cash income	2,729	2,915	1,538	2,026

Table 2—Assessments, Taxes and Per Cent of Taxes Levied on Various Types of Farm Property 116 Farms in Madawaska County, New Brunswick, 1961

	Assessed value	Tax rate per $100 of assessment	Tax	Per cent of total tax
	—dollars per farm—			
Land	1,624	5.06	82	35.1
Buildings	2,035	5.06	103	44.0
Livestock	323	5.06	16	6.8
Machinery (taxable)	402	5.06	21	8.9
Poll tax	....	....	12	5.2
Total	**4,384**	**5.06**	**234**	**100.0**

Table 3—Farm and Assessed Values of Various Types of Farm Capital 116 Farms in Madawaska County, New Brunswick, 1961

	Farm value	Assessed value	Assessed value as per cent of farm value
	—dollars—		
Crop and pasture land per acre	24	17	71
Woodland per acre	17	5	29
All land per acre	19	9	47
Buildings per farm			
Houses	2,300	1,085	47
Other buildings	1,354	950	70
All buildings	3,654	2,035	56
Livestock (per head)			
Cows	136	50	37
Heifers and steers	84	20	24
Calves	29	10	34
Sows	50	10	20
Ewes	9	5	56
Horses	153	50	33
Hens	1	1	100
Machinery (taxable)	1,430	401	28

New Brunswick is one of the lowest of all the Canadian Provinces and its taxing effort the highest[1]". In so far as the farm tax situation is concerned it may be noted that the ratio of municipal taxes to farm income in New Brunswick has in recent years been the highest in Canada. In 1961 farm taxes represented an amount equal to 34 per cent of the net income from farming operations before taxes[2].

Special problem areas in education, as seen by the Commission, are those "having a disproportionate number of children in relation to their tax paying ability"[3]. School facilities in Madawaska County are rated quite favorably with the expenditures on education in 1953 of $103.99 per pupil, only slightly below the average of $112.02 per pupil for all the rural areas in the province. Owing to the large size of family (7.1 children per family) and the relatively low family incomes, as indicated by data from the study, the task of maintaining current standards of education in the county is a heavy burden on rural people.

To provide more adequate facilities in low income areas, the Commission recommended a minimum program calculated on a "per pupil cost" basis. Contribution by the municipalities to the minimum program would be determined by "the application throughout the province of a uniform rate of taxation to the equalized assessment". The current system of provincial grants, "which favor those who have and discriminate against those who have not", would be replaced by basic government grants to each municipality calculated as the difference between the total cost of the minimum program in the municipality less the amount raised by the application of the uniform rate. Supplementary provincial grants beyond the minimum program would be paid for the general relief of property taxation and encouragement of advanced work. In view of the low tax-paying ability of the province it was the opinion of the commission, "that the best basis of provincial support for the schools of New Brunswick will not be obtained until the Government of Canada participates in it".

While the Commission intimated that relief from property taxation would have to come largely from outside sources, the report includes a number of recommendations aimed at increased efficiency in the administration of school programs. The question arises as to further steps which might be taken at the municipal level to reduce tax costs.

One of the points frequently raised in public hearings held by the Commission was that Crown lands which are very extensive in New Brunswick, pay no tax revenue to the municipality in which they are located. One suggestion frequently made is that such municipalities receive a share of revenues derived from Crown land in lieu of taxes. A similar provision is included in agreements negotiated under the Federal Agricultural Rehabilitation and Development Act which stipulate that lands taken over by the provinces under this program shall pay municipal taxes on the basis of tax assessments for agricultural land which would have been in force had the land not been acquired by the province.

Another possibility is a county land use program which might improve the tax base through more efficient use of resources and reduce municipal costs. Such programs which have had a considerable degree of success elsewhere usually involve some control or operation of low-quality tax-delinquent land as well as settlement in such areas.

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[1] Report of the Royal Commission on the Financing of Schools in New Brunswick, Fredericton, N.B., 1955.

[2] Dominion Bureau of Statistics, Farm Net Income, 1961.

[3] Ibid.

The final step in land abandonment is usually that of cutting any merchantable timber from the property which subsequently becomes tax-delinquent. Property acquired by tax sale also frequently reverts to the municipality after someone has purchased and stripped anything of value from it. A long-term management program, it is suggested, would provide increased employment and income in such areas as well as added revenue for the municipality.

Acquisition of such land also permits some control over extension of municipal services, the cost of which far exceeds the benefits derived from such areas. It was stated, for example, that a saving was secured by providing one family in the county with a rent-free home for the winter rather than maintain municipal services such as road clearing, school bus transportation, etc., in their district. Control of land would also insure that errors of settlement in such areas were not repeated.

One of the factors contributing to the tax problem is the declining tax base in many rural areas. Service and local industries formerly located in these areas tend to move to the urban centres with a subsequent loss in tax revenue. An added factor in Madawaska County is proximity to the State of Maine and a tendency to patronize facilities of American towns conveniently located along the border. This competition no doubt restricts the operation of commercial establishments which might otherwise contribute to municipal tax revenues of the county. Programs designed to encourage tourism and local industries, etc., while mainly associated with efforts to increase employment and income, may play an important part in improving the tax situation.

A SEMINAR ON "AGRICULTURE IN THE NEW INTERNATIONAL FRAMEWORK—ITS IMPACT ON CANADIAN AGRICULTURE"

A seminar on *Agriculture in the New International Framework—its Impact on Canadian Agriculture* was held at Macdonald College, P.Q. on January 7-8, 1963, under the direction of Dr. D. L. Macfarlane, Head of the Department of Agricultural Economics.

The three main speakers or discussion leaders were Professor Sol Sinclair, Head, Department of Agricultural Economics and Farm Management, University of Manitoba; Dr. S. C. Hudson, Secretary of the International Wheat Council in 1961 and 1962 and recently appointed Director, Agriculture and Fisheries Branch, Department of Trade and Commerce; and Mr. Frank Shefrin, Chief, Policies and Prices Section, Economics Division, Canada Department of Agriculture.

Professor Sinclair, recently returned from Europe, where he spent a year studying the European Common Market, under a fellowship from the Canada Council, reviewed the purposes and problems of the E.C.M. Dr. Hudson dealt with the implications of international commodity agreements on Canadian agriculture, and Mr. Shefrin discussed the organization and activities of international and intergovernmental agencies, other than the E.C.M., which are concerned with agricultural matters.

The Seminar was attended by Macdonald College students in agricultural economics, members of the staff of the College as well as of the Department of Economics and Political Science of McGill University and representatives of government, banking, trade and industry.

POTATO INDUSTRY IN ALBERTA—1962[1]

(Part II)

Costs of Production at Different Scales of Operations

E. E. R. KING

The information supplied in this second part of our article on Alberta's potato industry is part of the findings of an economic survey conducted by the Economics Division during the summer and fall months of 1962. The survey included 46 growers in irrigation districts of southern Alberta and 35 growers in the Edmonton area. The 81 growers planted about 60 per cent of the 1962 commercial potato acreage in Alberta.

Our sample was stratified so as to include representative enterprises of different sizes, ranging from only one-quarter of an acre to nearly 600 acres. Considering the province as a whole, 1962 can be cited as a fairly typical year for the production of potatoes. Drought in the southern part of the province did not appreciably affect potato yields in the irrigation districts, a few districts reported early frost, and a few growers north of Edmonton reported low yields as a result of too much rain; however, most growers reported yields comparable with those obtained in previous years.

The Edmonton area has climatic and environmental conditions quite different from those of the Irrigation area and, consequently, the two areas are analyzed separately. Within two areas costs are analyzed according to the size of the potato enterprise. The size groups were determined primarily on the basis of capital investment in the potato enterprise. The costs for each size group were broken down into variable and fixed costs.

In this study variable costs are defined as costs that may be altered during the course of the production period, and are analogous to the operating costs incurred during the crop year. Fixed costs are incurred during one period and are spread over succeeding periods. Once incurred fixed costs are a cost to production whether it takes place or not. One difficulty is to allocate fixed costs to one specific enterprise when the farm actually operates a number of complementary enterprises. In this study a farm organization statement was taken from each operator along with an estimate of the importance of each piece of equipment and each building to the potato enterprise. From these bases fixed costs were allocated to the potato enterprise. In general, 100 per cent of the fixed costs against potato storage buildings and specialized potato equipment were charged to the potato enterprise whereas the allocation of fixed costs on power equipment and some cultural equipment were in the neighborhood of 60 per cent, although the range was from five to 100 per cent depending on individual circumstances.

Tables 1 and 2 show the cost per acre of producing potatoes for each size group in the Edmonton and Irrigation areas respectively. The tables are for the most part self-explanatory but a few comments may help clarify our schema of analysis. In regard to fuel consumption, we found that large enterprises enjoyed economies of scale through the use of larger tractors that consumed the lower-priced fuels. The main reason for the higher cost of fuels and lubricants in the Irrigation area was attributed to the general use of petroleum-powered sprinkler systems; in addition, all grades of fuel were generally two cents a gallon higher when compared with the Edmonton area. Custom work hired is a net amount inasmuch as custom work performed has been subtracted. Machinery rentals were included under custom work along with cost items such as custom trucking, field cultivation, mechanical harvesting, and crop spraying. Some of the larger enterprises in the Irrigation area make a practice of hiring aeroplanes to spray their crops. Hired labor refers only to that labor which was hired and does not include operator's or family labor. In cases where a partnership existed the partners were considered as joint operators and their labor was not included as a cost item. The seed item included both purchased seed and homegrown seed, the latter valued at the operator's estimate of sale value. Fertilizer refers primarily to the cost of commercial fertilizer. Barnyard manure was used by only a few enterprises. One operator purchased barnyard manure and the full cost of this manure was included as a cost item. In cases where the operator did not purchase the manure it was valued at the cost of hauling and spreading. The cost of commercial fertilizer was from one to eight dollars a ton lower in the Irrigation than in the Edmonton area. Disinfectants and insect sprays were not used in large quantities; the smallest enterprises studied usually purchased these items in lump sums, in excess of actual requirements. Burlap sacks were generally used for containers, although a number of growers sold their potatoes in consumer packs. In a few cases potatoes were sold in bulk form. Cost items included under "Other" are fuel oil for heating, twine, rubber boots, crop insurance, and other miscellaneous items. Interest on working capital was estimated at seven per cent on one-half of the variable costs. Interest on investment was calculated at five per cent on the present value of buildings and equipment. The diminishing-balance method was used for computing

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[1] The second part of an article on the potato industry in Alberta. The first part, which described the structure of the industry, appeared in the December 1962 issue of The Economic Annalist.

Table 1—Costs of Producing Potatoes, by Size of Enterprise, Edmonton Area, 1962

	Size of potato enterprise		
	0–100 acres	101–150 acres	151–350 acres
		—dollars—	
Variable costs per acre			
Fuels and lubricants	5.83	4.82	3.50
Annual repairs, power equipment and machinery	11.50	7.94	8.44
License and insurance	1.84	0.92	1.02
Building repairs and insurance (potato buildings only)	1.20	0.95	1.86
Custom work hired	2.45	0.47	1.33
Labor hired	22.73	23.71	41.03
Seed	19.44	23.40	22.15
Fertilizer	4.63	7.22	8.88
Sprays (weed, insecticides, disinfectants, etc.)	2.00	1.03	0.83
Containers	7.85	9.05	17.16
Electric power and telephone	0.97	1.37	1.77
Other	0.37	0.46	0.57
Interest on working capital	2.83	2.85	3.80
Total variable costs	**83.64**	**84.19**	**112.34**
Fixed costs per acre			
Interest on investment			
Equipment (potato share)	7.34	5.79	5.60
Buildings (used for potatoes)	2.76	0.68	3.29
Depreciation			
Equipment (potato share)	21.91	17.42	16.73
Buildings (used for potatoes)	3.87	1.40	2.70
Land taxes plus land rent	9.33	8.87	6.48
Water rate	....	....	....
Total fixed costs	**45.21**	**34.16**	**34.80**
Total variable costs	**83.64**	**84.19**	**112.34**
Total costs per acre of potato (excluding return to land, operator's labor and management)	**128.85**	**118.35**	**147.14**

depreciation charges on equipment, whereas the straight-line method was used for buildings. Water rate was an additional cost item to the growers in the Irrigation area. The cost of irrigation water varied from district to district within the Irrigation area, ranging from $1.50 to $3.50 an acre.

Of significance in Tables 1 and 2 were the total variable costs, total fixed costs and the total costs. It is important to note that returns to operator's land, operator's labor and management were not included as costs to the potato enterprise. Total fixed costs as defined in the above tables reflect capital investment in buildings and equipment used for the potato enterprise. A point of interest was the relatively low cost of interest and depreciation in the 101-150 acre size group in the Edmonton area. The present values of storage buildings in the Edmonton area from the small to the large enterprises ranged as follows: $935.61, $2,272.00 and $13,719.00, and, when considered on a per acre basis, the second size group had the lowest per acre value. One of the main cost items listed under variable costs was hired labor. The hired labor component in the 101-150 acre size group was relatively low when compared with other size groups. However, the number of operators per potato enterprise in this particular size group was high (about two in the Edmonton area and about three in the Irrigation area) and as a consequence operator's labor served to displace hired labor, thereby minimizing the cost of the latter.

Table 2—Costs of Producing Potatoes, by Size of Enterprise, Irrigation Area, 1962

	Size of potato enterprise			
	0–100 acres	101–150 acres	151–350 acres	351–600 acres
	—dollars—			
Variable costs				
Fuels and lubricants	8.70	7.09	8.07	8.86
Annual repairs, power equipment and machinery	12.35	16.75	11.92	13.19
License and insurance	1.16	1.52	1.16	1.20
Building repairs and insurance (potato buildings only)	3.62	1.59	1.00	2.45
Custom work hired	1.01	....	0.47	1.07
Labor hired	33.76	21.75	39.03	44.85
Seed	22.64	21.25	22.12	23.87
Fertilizer	6.81	13.75	10.19	9.69
Sprays (weed, insecticides, disinfectants, etc.)	1.93	2.12	1.48	3.06
Containers	19.86	15.74	18.61	14.39
Electric power and telephone	1.59	2.22	1.49	2.12
Other	1.39	1.06	1.70	2.72
Interest on working capital	4.02	3.67	4.10	4.46
Total variable costs	**118.84**	**108.51**	**121.34**	**131.93**
Fixed costs				
Interest on investment				
Equipment (potato share)	10.08	6.68	8.29	8.60
Buildings (used for potatoes)	2.06	2.85	2.33	2.89
Depreciation				
Equipment (potato share)	22.73	19.74	24.11	25.29
Buildings (used for potatoes)	3.54	4.02	2.82	2.91
Land taxes plus land rent	10.08	5.59	7.23	5.65
Water rate	2.13	2.20	2.07	2.08
Total fixed costs	**50.62**	**41.08**	**46.85**	**47.42**
Total variable costs	**118.84**	**108.51**	**121.34**	**131.93**
Total costs per acre of potato (excluding return to land, operator's labor and management)	**169.46**	**149.59**	**168.19**	**179.35**

In Tables 3 and 4 the per acre costs of the previous tables have been converted into costs per ton. The results of the survey showed that within the size range, as shown in Tables 3 and 4, there was a correlation between an increase in scale and higher yields. There are factors that may explain this apparent phenomenon. Looking at the Edmonton area there appears to have been a correlation between greater use of fertilizer and higher yields. In the Irrigation area the relation between use of fertilizer and higher yields is not well defined. Soil type is another important factor, and it is suggested that the large-scale enterprises are predominantly located on the more favorable soil types. In regard to varieties, Netted Gem was the predominant variety grown in 1962 and it, as well as early potatoes, appeared in about equal proportions within all size groups. Another factor to be considered is management. It must be emphasized, however, that the average yield per acre shown in Tables 3 and 4 pertains only to the 1962 crop, and that yields of another year or series of years may give different results. It was noted that, given the 1962 crop yields, the differences of costs per ton among the size groups was not great although a tendency for costs to decrease and then increase persisted.

Table 3—Costs of Producing Potatoes, per Ton, by Size of Enterprise, Edmonton Area 1962

	Size of potato enterprise		
	0–100 acres	101–150 acres	151–350 acres
Average yield per acre in tons	5.32	6.04	6.69
		—dollars—	
Variable costs per ton			
Fuels and lubricants	1.10	0.80	0.52
Annual repairs, power equipment and machinery	2.16	1.31	1.26
License and insurance	0.34	0.15	0.15
Buildings repairs and insurance (potato buildings only)	0.22	0.16	0.28
Custom work hired	0.46	0.08	0.20
Labor hired	4.27	3.92	6.13
Seed	3.66	3.87	3.31
Fertilizer	0.87	1.20	1.33
Sprays, (weed, insecticides, disinfectants, etc.)	0.38	0.17	0.13
Containers	1.48	1.50	2.57
Electric power and telephone	0.18	0.23	0.26
Other	0.07	0.08	0.08
Interest on working capital	0.53	0.47	0.57
Total variable costs	**15.72**	**13.94**	**16.79**
Fixed costs per ton			
Interest on investment			
Equipment (potato share)	1.38	0.96	0.84
Buildings (used for potatoes)	0.52	0.11	0.49
Depreciation			
Equipment (potato share)	4.12	2.89	2.50
Buildings (used for potatoes)	0.73	0.23	0.40
Land taxes plus land rent	1.75	1.47	0.97
Water rate	...	...	...
Total fixed costs	**8.50**	**5.66**	**5.20**
Total variable costs	**15.72**	**13.94**	**16.79**
Total costs per acre of potato (excluding return to land, operator's labor and management)	**24.22**	**19.60**	**21.99**

Table 4—Costs of Producing Potatoes, per Ton, by Size of Enterprise, Irrigation Area 1962

	Size of potato enterprise			
	0–100 acres	101–150 acres	151–350 acres	351–600 acres
Average yield per acre in tons	8.24	8.45	9.45	9.51
	—dollars—			
Variable costs per ton				
Fuels and lubricants	1.06	0.84	0.85	0.93
Annual repairs, power equipment and machinery	1.50	1.98	1.26	1.39
License and insurance	0.14	0.18	0.12	0.13
Building repairs and insurance (potato buildings only)	0.44	0.18	0.11	0.26
Custom work hired	0.12	....	0.05	0.11
Labor hired	4.10	2.57	4.13	4.72
Seed	2.75	2.52	2.34	2.51
Fertilizer	0.82	1.63	1.08	1.02
Sprays (weed, insecticides, disinfectants, etc.)	0.23	0.25	0.16	0.32
Containers	2.41	1.86	1.97	1.51
Electric power and telephone	0.19	0.26	0.16	0.22
Other	0.17	0.13	0.18	0.29
Interest on working capital	0.49	0.44	0.43	0.47
Total variable costs	**14.42**	**12.84**	**12.84**	**13.88**
Fixed costs per ton				
Interest on investment				
Equipment (potato share)	1.22	0.79	0.88	0.90
Buildings (used for potatoes)	0.25	0.34	0.25	0.30
Depreciation				
Equipment (potato share)	2.76	2.34	2.55	2.66
Buildings (used for potatoes)	0.43	0.48	0.30	0.31
Land taxes plus land rent	1.22	0.66	0.76	0.59
Water rate	0.26	0.26	0.22	0.22
Total fixed cost	**6.14**	**4.87**	**4.96**	**4.98**
Total variable costs	**14.42**	**12.84**	**12.84**	**13.88**
Total costs per acre of potato (excluding return to land, operator's labor and management)	**20.56**	**17.71**	**17.80**	**18.86**

Only the costs of production, excluding a return to operator's land, labor and management, have been considered. Values of bareland ranged from $35.00 to $2,500.00 an acre, the latter being in close proximity to the large urban centres and valued according to use for urban development rather than for agricultural purposes. In the survey adequate information was not obtained to give a reliable estimate of the time spent by operators performing labor and management duties, especially on the more complex enterprises. If an allowance were made for a return to operator's labor and management the 101-150 acre size group would not enjoy the most favorable cost positions, as shown in Tables 1 to 4, and costs would be similar, or slightly higher than the 151-360 acre size groups in the respective areas.

In summary, when considered on the basis of cost per acre, potato production costs were generally lower in the Edmonton area but when considered on the basis of cost per ton they were lower in the Irrigation area. For the 1962 crop average costs per ton were the highest for the 0-100 acre group and the lowest for the 101-150 acre group.

PART-TIME FARMING IN THE NORTH OKANAGAN, BRITISH COLUMBIA, 1960

N. D. TURNBULL

An insight into the type of part-time farming which characterizes many farms in the North Okanagan Valley of British Columbia may be gained from a special study of 81 of these farms, visited by researchers from the Vancouver Regional Office of the Economics Division during the summer of 1961. Seventeen of these farms, designated as semi-retired farms, for the purposes of our analysis, derived most of their nonfarm income from investments, pensions, nonfarm rent, etc. The other 64 secured the largest part of their nonfarm income from work off the farm. They were designated as wage-earners and divided into two groups—a high income and a low income group—according to the size of operator's labor income.

Many wage-earners, particularly among those in the high income group had hopes of becoming full-time farmers. The others preferred to hold on to their nonfarm jobs and continue farming on a part-time basis.

Capital Investment.—The semi-retired operators had an average farm investment of $12,588 per farm, including $9,847 in real estate (78 per cent), $1,925 in equipment (15 per cent), $736 in livestock (six per cent), and $80 in miscellaneous other items.

The 64 wage-earners had an average investment of $16,983 per farm. The 32 wage-earners in the high income group had an average investment of $15,501, which is $2,963 lower than the average for the other 32, in the low income group, owing chiefly to better housing in the latter group. The high income group's investment in livestock averaged $1,119 per farm and exceeded by $269 the average investment of $850 by the low income group. The average value of equipment, at $2,599 per farm, was only $48 higher on the high than on the low income group farms.

Table 1.—Average Capital Investment, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—dollars—		
Improved land	5,728	6,102	6,461	6,282
Unimproved land	821	1,476	1,457	1,466
House	2,296	2,489	5,383	3,936
Other buildings	1,002	1,575	1,695	1,635
Total real estate	9,847	11,642	14,996	13,319
Livestock	736	1,119	850	985
Special equipment	1,166	1,472	1,274	1,373
General equipment	759	1,127	1,277	1,202
Equipment, total	1,925	2,599	2,551	2,575
Miscellaneous items	80	141	67	104
Total farm investment	12,588	15,501	18,464	16,983

Although higher on wage-earner than on semi-retired farms, each component of average investment represented the same proportion of the total for both types of farms, the breakdown of the average for $16,983 invested in the 64 wage-earner farms being as follows: total, $16,983; real estate, $13,319 (78 per cent); equipment, $2,575 (15 per cent); livestock $985 (six per cent); and $104 in miscellaneous other items.

Land Use and Crops.—Wage-earners, on the average, operated much larger farms than their semi-retired neighbors; the average number of total acres, in unimproved as well as in improved land, was 98.6 on wage-earner and only 60.8 on semi-retired farms. The difference, however, was even more pronounced between the high and the low income groups of farms. The former group had an average of 123.4 total acres per farm whereas the low income group had an average only 73.8 acres per farm. The discrepancy, it should be noted, stemmed chiefly from the much higher acreage in unimproved land for the high than for the low income group of farms—86.9 and 41.7 per cent respectively. The average total area in improved land ranged from 36.5 acres per farm for the 32 high income wage-earner farms to 32.1 for the 32 low income farms and 29.9 for the semi-retired farms.

Table 2.—Average Acres Operated, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—acres—		
Improved land:				
Owned	28.3	31.2	31.7	31.4
Rented	1.6	5.3	0.4	2.9
Improved land, total	29.9	36.5	32.1	34.3
Unimproved land:				
Owned	30.9	82.0	41.7	61.8
Rented	—	4.9	—	2.5
Unimproved land, total	30.9	86.9	41.7	64.3
Acres operated, total	60.8	123.4	73.8	98.6

The semi-retired farms had fewer acres in grains, on the average, than the wage-earner farms; the grain acreage averaged eight acres per semi-retired farm and 10.7 acres per wage-earner farm. Wheat accounted for a much larger proportion of the grain acreage on semi-retired than on other farms. Semi-retired farms had only an average of 0.1 acre per farm in potatoes and vegetables and low as well as high-income wage-earner farms had a corresponding average of 2.6 acres per farm. Semi-retired farms, on the other hand, had a much larger acreage, on the average, in summerfallow—4.0 as compared with 2.8 and 2.6 acres for the low and the high-income wage-earner farms respectively.

Grain crops yielded about the same on all types of farm except for grain yields which were much lower, on the average, on low-income wage-earner farm than on other farms.

Table 3.—Average Number of Acres in Crop, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—acres—		
Wheat	3.9	4.2	2.9	3.6
Oats	1.6	4.2	2.5	3.4
Barley	1.5	1.1	0.4	0.8
Mixed grains	—	0.3	3.8	2.0
Peas	1.0	0.4	1.4	0.9
Grains, total	8.0	10.2	11.0	10.7
Hay	9.3	12.9	7.7	10.2
Pasture	7.2	6.6	5.7	6.1
Total hay and pasture, total	16.5	19.5	13.4	16.3
Potatoes and vegetables	0.1	2.6	2.6	2.6
Summerfallow	4.0	2.8	2.6	2.7
Farmstead	1.3	1.4	1.9	1.7
Rented out	—	—	0.6	0.3
Improved land, total	29.9	36.5	32.1	34.3

Livestock.—As may be expected the average number of animal units per farm was the lowest for the semi-retired group of farms and higher for the high-income wage-earner group than for the low-income wage-earner group of farms. The average number of dairy cows was more than twice as high on high-income wage-earner farms than on semi-retired farms.

Productive Man-Work Units.—The number of productive man-work units averaged only 60 per semi-retired farm and 77 per low-income wage-earner farm, as compared with 101 per high-income wage-earner farm. The average

Table 4.—Average Yields per Acre, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—tons—		
Grain	0.95	0.98	0.54	0.75
Hay	1.85	1.83	1.88	1.85

Table 5.—Average Number of Animal Units, 81 Part-time Farms, North Okanagan, B.C. Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—animal units—		
Cows:				
Beef	1.5	1.4	1.1	1.2
Dairy	1.3	2.8	2.0	2.4
Cows, total	2.8	4.2	3.1	3.6
Cattle, total	4.5	6.7	4.8	5.8
Other livestock, total	0.6	1.2	0.8	1.0
Animal units, total	5.1	7.9	5.6	6.8

number of man-equivalents was obviously also very low; it ranged from only 0.32 on semi-retired and on low-income wage-earner farms to 0.45 on high-income wage-earner farms.

Receipts.—Average current receipts were much higher on high-income wage-earner farms than on other farms; they ranged from only $755 per farm on low-income wage-earner farms to $898 on semi-retired and $1,828 on high-income wage-earner farms. Capital receipts and inventory increases, combined, were, on the average, also higher on high-income wage-earner farms than on others; they ranged from $422 on semi-retired to $626 on low-income wage-earner and $760 on high-income wage-earner farms. Sales of crops, livestock, and farm produce, in that descending order, were the largest contributors to income. Average sales of crops ranged from only $257 for the low-income wage-earner farms to $333 for the semi-retired and $687 for the high-income wage-earner farms. Average sales of livestock ranged from $272 on semi-retired farms

Table 6.—Average Number of Productive Man Work Units, Man-equivalents and Productive Man Work Units per Man-equivalent, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—number—		
Productive man-work units	60	101	77	89
Man-equivalents	0.32	0.45	0.32	0.38
Productive man-work units per man-equivalent	188	224	241	234

to $321 on low-income wage-earner and $535 on high-income wage-earner farms. Average sales of farm produce were about the same on semi-retired as on low-income wage-earner farms, at $158 and $167 respectively, and over twice as high on high-income wage-earner farms, at $390 per farm. Total receipts, including current and capital receipts and inventory increases were nearly twice as high on high-income wage-earner as on other farms; they averaged $1,828 per farm for the semi-retired group and $898 and $755 for the semi-retired and the low-income wage-earner groups respectively.

Table 7.—Average Current Receipts, 81 Part-time Farms, North Okanagan, B.C.
Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—dollars—		
Grain	234	332	166	249
Hay and fodder	70	246	56	151
Fruit and vegetables	—	62	35	49
Potatoes	29	47	—	23
Crops, total	333	687	257	472
Cattle	262	403	284	344
Sheep	9	26	10	18
Hogs	—	53	6	29
Other	1	53	21	37
Livestock, total	272	535	321	428
Milk and cream	111	268	133	200
Eggs	45	115	29	72
Other	2	7	5	6
Farm produce, total	158	390	167	278
Custom work	—	133	5	69
Forest products	130	78	5	42
Miscellaneous	5	5	—	2
Total current receipts	898	1,828	755	1,291

Expenses.—Total current expenses were about the same, on the average, for both groups of wage-earner farms and nearly twice as high for these two groups as for the semi-retired group. They averaged $1,176 and $1,213 per farm for the low and high-income wage-earner groups, respectively and $657 for the semi-retired group of farms. On the high-income wage-earner farms, the chief types of current expenses were: equipment, $321; livestock expenses, $318; real estate levies, $204; and crop expenses, $109. On the low-income wage-earner farms they were: livestock expenses, $379; equipment, $335; real estate levies, $159; and crop expenses, $122. On the semi-retired farms they were: equipment, $217; livestock, $138; and real estate levies, $108.

Capital expenses and inventory decreases, combined, were about the same for the two groups of wage-earner farms at $890 for the high-income and $888 for the low-income group, per farm, on the average; they averaged $737 per farm in the semi-retired group.

Table 8.—Average Current Expenses, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	54
		—dollars—		
Real estate levies	108	159	204	182
Repairs,land and buildings	36	16	76	46
Crops	37	122	109	116
Livestock	138	379	318	348
Custom work	96	73	88	80
Equipment	217	335	321	328
Labor	11	24	48	36
Miscellaneous	14	68	49	58
Total current expenses	657	1,176	1,213	1,194

Average total expenses were also about the same for the two groups of wage-earner farms. They ranged, in descending order, from $2,101 on high-income and $2,066 on low income wage-earner farms to $1,394 on semi-retired farms.

Farm Management Income Measures.—The measures of income generally used in farm business management analysis do not give a very attractive picture of

Table 9.—Average Operating Statement, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—dollars—		
Current receipts	898	1,828	755	1,291
Capital receipts	71	150	104	127
Inventory increase	351	610	522	566
Total receipts	1,320	2,588	1,381	1,984
Current expenses	657	1,176	1,213	1,194
Capital expenses	598	735	740	737
Inventory decrease	139	155	148	152
Total expenses	1,394	2,066	2,101	2,083
Family farm income	−74	522	−720	−99
Less interest on investment	629	775	923	849
Value unpaid family labor	31	82	169	126
Operator's labor income	−734	−335	−1,812	−1,074
Plus value of perquisites	416	485	847	666
Operator's labor earnings	−318	−150	−965	−408

Table 10.—Average Nonfarm Income, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—dollars—		
Income from pensions, investments, family allowances, non farm rents, etc	1,441	187	304	245
Wages, non-farm work	23	1,787	3,237	2,512
Non-farm income, total	1,464	1,974	3,541	2,757

the income situation. Family farm income, which is the amount left over after total expenses have been deducted from total receipts, averaged $522 per farm on high-income wage-earner farms. On low-income wage-earner farms and on semi-retired farms total expenses, on the average, exceeded total receipts by $720 and $74 respectively.

Operator's labor income, made up of family farm income less interest on investment and the value of unpaid family labor, was negative for all three

Table 11.—Number Employed and Kinds of Nonfarm Occupations, 81 Part-time Farms, North Okanagan, B.C., Year Ending March 31, 1961

	Semi-retired	Wage-earners		
		Operator's labor income		All wage-earners
		High	Low	
Number of farms	17	32	32	64
		—number—		
Occupation of operator				
Forestry—saw mills	—	9	11	20
Semi-professional	—	2	7	9
Truck or bus driving	—	5	2	7
Carpenter or trades	—	2	4	6
Department of Highways	—	1	5	6
Teaching	—	2	—	2
Paying guests	1	1	1	2
Farm work	—	—	1	1
Miscellaneous	—	7	9	16
Total number of positions occupied	1	29	40	69
Total number of males employed	1	23	32	55
Occupation of wife				
Teaching	—	2	—	2
Clerical	—	—	2	2
Housekeeper	—	1	—	1
Total number of positions occupied	—	3	2	5
Total number of females employed	—	3	2	5

groups of farms; it ranged from an average of minus $335 per farm on high-income wage-earner farms to minus $734 on semi-retired farms and minus $1,812 on low-income wage-earner farms.

Nonfarm Income.—The income picture becomes a great deal brighter when nonfarm income is added to farm income. It ranged from $1,464, on the average, for semi-retired farms to $1,974 for high-income and $3,541 for low-income wage-earner farms.

The lumber industry provided the greatest number of jobs for the part-time farmers. Next came the semi-professional occupations, followed by trucking and bus driving.

Five of the part-time farmers had wives who had paid employment: two were school teachers, two were doing clerical work and the other was a housekeeper.

PUBLICATIONS OF THE ECONOMICS DIVISION

Directory of Co-operative Associations in Canada. Ottawa, 1962, pp. 126.

The fifth Directory in that series, published by the Economics Division.

The Variability of and the Sources of Farm Cash Income—Canada and Provinces, 1926-1960. Ware, D. W. Ottawa, March 1963. pp. I + 24.

A study that depicts the changes in the variability of farm cash income in the past three decades and outlines the changes in the relative importance of individual farm products since 1926.

The author acknowledges the contribution and co-operation of the Farm Finance Section, Agriculture Division, Dominion Bureau of Statistics and makes a special mention of the work done by D. L. Bolton of the Prices and Statistics Unit of the Economics Division in the preparation of the 17 statistical tables and 19 charts that serve as an essential complement to the eight-page text.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.

Sold in Canada by the Queen's Printer, Ottawa.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. II, No. 11, October 1962. FAO, Rome, Italy. pp. 48.

L. Lichnowsky supplies the readers of the Bulletin with the first part of an article on "Agricultural Policy in Mainland China since 1949". This first part contains two sections, one on Postwar reconstruction, 1949-52, and the other on The first five-year plan (1953-57).

The three Commodity Notes deal with the following topics: (a) Effects of Increasing the Butterfat Content of Liquid Milk and Butter on Butterfat Surpluses; (b) Agricultural Commodity Trade of the U.S.S.R. in 1961; and Rice: Trends in the Value of Trade.

Economic Bulletin for Europe. Vol. 14, No. 2, November 1962. Economic Commission for Europe, Geneva, Switzerland. pp. 88. Price: U.S. $1.00.

This issue of the Bulletin deals with recent economic developments in Europe and gives special consideration to: (a) industrial output and inputs, agriculture, the allocation of resources to investment, and personal incomes and supplies in eastern Europe and the Soviet Union; (b) production, employment, wages, prices, and the growth of demand in western Europe; (c) policies; and (d) conditions in southern Europe.

Agriculture in the World Economy (Revised edition). FAO, Rome, Italy. 1962. pp. VIII + 65. Price: $1.00.

A booklet which, in the words of the Director-General of FAO, "presents in graphic form the many facets of the role of agriculture in world economy, and will......contribute to a wider understanding of the complex factors and interrelationships involved in bringing about an agricultural transformation in the developing countries which is of crucial importance in the attack on rural poverty."

World Grain Statistics, 1961/62. Exports by source and destination. FAO, Rome, Italy. 1962. pp. 70. Price: $0.50.

The thirteenth issue of FAO's annual report on world grain statistics.

Annual Bulletin of Transport Statistics for Europe, 1961. Economic Commission for Europe, Geneva, Switzerland, 1962. pp. XXI + 77. Price: U.S. $1.00.

This thirteenth issue of the Bulletin deals with The Transport Situation in Europe, under the following section headings: Transport of passengers and goods; Networks; Mobile equipment; and Utilization of Equipment. The 21-page text is followed by 34 statistical tables on the various aspects of transportation.

Monthly Bulletin of Agricultural Economics and Statistics. Vol. 12, No. 1, January 1963. Rome, Italy.

This issue of the Bulletin contains the first part of an article on Agricultural Policies in Europe in the 1960s. This first part bears the title of Problems of Agriculture in a Growing Economy and is organized in two sections. The first section deals with current trends and the second with objectives for the 1960s.

Fertilizers. An annual review of world production, consumption and trade. 1961. FAO, Rome, Italy. 1963. pp. VIII + 137.

A record and an analysis, for 1961, of the production, trade and consumption of fertilizers in the world as a whole and in the different continents and countries.

Agricultural Commodities and the European Common Market. FAO Commodity Policy No. 13. FAO, Rome, Italy, 1962. pp. IX + 61.

A study that supplies information and some preliminary analysis of the role of major agricultural commodities under the provisions of the Treaty of Rome.

The first section of Part One: Some General Aspects deals with The Common Agricultural Policy of the European Economic Community under the following subsection headings: Proposals for a common agricultural policy: The problem of establishing common prices; The basic agricultural problem; and The United Kingdom and the common market for agriculture. The second section deals with The Association of Overseas Countries and Territories under the following subsection headings: New orientation of the régime of association as proposed by the Commission; Liberalization of trade; The establishment of a "Caisse commune de production"; Measures for increasing consumption of tropical products; and Some implications for the trade of third countries of the association of the PTOM (overseas countries and territories).

Part Two consists of Notes on Individual Commodities, including, among others, grains fats and oils, dairy products, meat, and sugar.

OTHER PUBLICATIONS

Problems of the Dairy Industry in Canada. Seventh Annual Workshop Report of the Canadian Agricultural Economics Society. Workshop held at the Ontario Agricultural College, Guelph, June 11-15, 1962. pp. III + 46 Price: $1.00. Available from: The Canadian Agricultural Economics Society, Box 632, Postal Station B, Ottawa 4, Ontario.

This report includes three keynote papers: (a) A Few Considerations of Relevance in the Formulation of a National Dairy Policy for Canada, by Professor G. I. Trant of the Department of Agricultural Economics of the O.A.C.; (b) Changes in Processing and Distribution in the Dairy Industry, by G. L. White, National Dairy Council, Ottawa; and (c) Marketing and Pricing of Milk and Milk Products, by W. H. Weijs, Farm Economics and Statistics Branch, Toronto.

The general report also contains the reports of the three work groups that were given the task of providing a statement concerning a national dairy policy for Canada. Each group tackled the task from a different viewpoint: group A centered its attention on production and incomes, group B on processing and distribution, and group C on marketing and pricing. The three group reports generally agreed that the fundamental problem of the is a demand-supply-price situation for dairy products conductive to adequate

is a demand-supply-price situation for dairy products conductive to adequate

returns to all resources used in the dairy industry. The three major issues that emerge from these reports are: (a) the need for greater co-operation among the various interest groups within the industry, (b) the need for a pricing system that better reflects the value of the various milk components, and (c) the need for provincial and federal legislation that will encourage the development of new and improved dairy products.

Report of the Manitoba Commission on Farm Organizations, Gilson, J. C., J. M. Nesbitt and E. J. Tyler. Winnipeg, Manitoba, December 15, 1962. pp. XII + 162. Price: $2.00.

A report to be read by all people concerned with better farm organization in Canada. It was submitted to the General Chairman of the Conference on Farm Organizations, in fulfilment of the terms of reference of the Commission established on June 16, 1961 to "Study and Advise on the Structure of a Suitable Farm Organization in the Province of Manitoba."

Western Nova Scotia Dairy Farm Business Analysis, 1960-1961. A study of 34 Dairy Farms. Grant, Walter V. and John M. Gates. Farm Management Division, Extension Services Branch, Nova Scotia Department of Agriculture and Marketing, Truro, Nova Scotia. December 1962. pp. 19.

A study of capital investment and of organization of dairy farms, supplemented by measures of success achieved in the dairy farm business.

How to Run a Business. Industrial Branch, Domestic Commerce Service, Canada Department of Trade and Commerce. 1963. pp. 186. Price $0.50. Available by mail from the Queen's Printer, Ottawa, and at the following Canadian Government bookshops: (a) Daly Building, Corner Mackenzie and Rideau, Ottawa, (b) Mackenzie Building, 36 Adelaide St. East, Toronto (c) Aeterna-Vie Building, 1182 St. Catherine St. West, Montreal.

How to Run a Business, the first of a series of pocketbooks on a wide range of subjects to be published by the Queen's Printer, is based on many years of research into the success and failure of thousands of Canadian business enterprises. It covers all types of business and deals with such subjects as forms of organization, location of factories and retail stores, policies of retail stores, records and accounts, uses and sources of credit, insurance, and laws and regulations.

Proceedings of the Symposium on Time Series Analysis, Brown University, June 11-14, 1962. Edited by Murray Rosenblatt. A publication in the SIAM Series in Applied Mathematics. John Wiley and Sons, Inc., New York and London. 1963. pp. XIV + 497.

This symposium was sponsored jointly by Brown University and the Office of Naval Research. Papers were contributed by prominent workers in the area of statistical time series, who discussed the state of current knowledge and considered basic problems in theory and application. Space forbidding even the briefest of description of the contents of the 28 chapters, mention can only be made here of the broad range of topics covered, namely, (1) Structural questions; representation of processes; interpolation and extrapolation; distribution of zeros and first passage time problems. (2) Statistical questions; estimation of spectra; regression analysis with stationary residuals; tests of hypothesis, (3) Applications: Geophysics, meteorology and oceanography; engineering; economics; biology.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

A. H. TURNER, Director

AUGUST 1963 **Vol. XXXIII No. 4**

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1642	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	263.9	290.8	235.1	130.7	126.2	186.1
1962										
Jan.	237.0	233.3	195.6	271.0	266.7	283.4	233.6	129.7	124.8	179.1
Feb.	237.1	233.6	196.4	270.8	265.7	....	....	129.8	125.0	181.4
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	183.9
April	237.4	233.7	195.4	272.0	266.1	293.1	235.8	130.3	125.8	184.0
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.1
June	240.3	243.3	200.7	285.8	272.8	....	....	130.5	125.6	186.3
July	241.3	249.6	203.7	295.6	277.7	....	....	131.0	127.0	186.7
August	242.6	238.0	171.6	304.3	262.5	295.8	236.0	131.4	128.4	188.7
Sept.	241.9	231.8	165.8	297.8	257.4	....	....	131.0	126.8	188.8
Oct.	241.7	232.1	165.9	298.2	255.9	....	....	131.5	127.2	189.1
Nov.	242.2	232.7	165.1	300.3	254.5	....	....	131.9	127.7	189.6
Dec.	242.2	230.0	167.2	292.8	253.4	....	....	131.9	127.8	189.4
1963										
Jan.	242.9	227.0	170.7	283.3	250.8	290.8	237.6	132.0	129.0	189.4
Feb.	242.7	224.1	174.3	273.8	249.8	....	....	132.1	129.4	191.1
Mar.	242.4	222.1	175.4	268.8	247.3	....	....	132.1	128.9	193.9
April	242.8	219.0	171.4	266.6	243.7	298.8	238.3	132.3	128.9	194.2
May	244.4	221.9	171.9	271.9	244.6	....	....	132.3	128.3	....
June	245.8	227.5	174.9	280.1	250.1	....	....	132.8	129.7	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

[a] Exclusive of living component. 1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Gross National Product.—Canada's G.N.P., seasonally adjusted at annual rates, was estimated at $41.6 billion for the first quarter of 1963 and was thus close to one per cent higher than for the last quarter of 1962. The increase also reflects some higher prices and, consequently, the volume of national production records only a fractional gain. It should be noted, however, that part of the estimated quarter-to-quarter changes is purely statistical; it assumes a normal crop in contrast to the near-record crop of 1962, which in itself involves a reduction of about $200 million from the fourth quarter of last year. The nonfarm G.N.P. is estimated to have risen just over one per cent.

The strengthening of the economy stemmed from consumer expenditures and government purchases of goods and services.

The main components of the Gross National Expenditure, in millions of dollars and at seasonally adjusted rates, in the last quarter of 1962 and in the first quarter of 1963, were as follows:

	1962 (last quarter)	1963 (first quarter)
Consumer expenditure	26,168	26,592
Government expenditure	7,776	7,920
Residential construction	1,592	1,564
Non-residential construction	2,652	2,736
Machinery and equipment	2,808	2,752
Value of physical change in business inventories	172	152
Farm inventories and grain in commercial channels	328	64
Exports of goods and services	8,436	8,476
Imports of goods and services	−8,840	−9,028
Residual error	160	356
Gross national expenditure	41,252	41,584

Population.—Canada's estimated population rose to 18,896,000 at June 1, 1963 from 18,570,000 a year earlier and 18,238,000 at the 1961 Census count. Estimated population, by provinces, at June 1 this year, was as follows: Newfoundland, 481,000; Prince Edward Island, 107,000; Nova Scotia, 756,000; New Brunswick, 614,000; Quebec, 5,468,000; Ontario, 6,448,000; Manitoba, 950,000; Saskatchewan, 933,000; Alberta, 1,405,000; British Columbia, 1,695,000; Yukon, 15,000; and Northwest Territories, 24,000.

Consumer Prices.—Canada's consumer price index (1949=100) rose to 132.8 in June from 132.2 in May 1963 and 130.5 in June 1962. In the May-June period of 1963 increases occurred in the food, clothing, health and personal care, and recreation and reading indexes. The transportation index declined but the housing, and the tobacco and alcohol indexes did not change.

The food index rose to 129.7 from 128.3. Prices were much higher for sugar and some fresh fruits and vegetables, particularly grapefruit, apples, potatoes, onions, carrots, and lettuce. Lower price increases were reported for a wide variety of foods, including beef, pork, milk, bread and flour, jam, coffee, jelly powder, and orange juice. Prices were lower for eggs, fish and chicken, butter, oranges, strawberries, tomatoes and cabbages.

General Wholesale Index.—Canada's general wholesale index (1935-39=100) rose to 245.8 in June from 244.4 in May 1963 and 240.3 in June 1962. The animal products group index rose to 257.5 in June from 252.4 in May, chiefly as a result of higher prices for hogs and pork. The vegetable products group index rose to 232.0 from 230.0 a month earlier.

Wholesale Trade.—Canada's wholesale trade rose to an estimated value of $865.7 million in April 1963 from $809.6 million in April 1962. The January-April total rose to $3,246.4 million in 1963 from $3,102.4 million in 1962.

Retail Trade.—Canada's retail trade increased from $1,562.6 million in May 1962 to $1,652.3 million in May 1963. Sales in the January-May period rose from $6,837.0 million in 1962 to $7,148.5 million in May 1963.

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949=100) rose to 194.2 in April from 193.9 in March. The manufacturing index dropped to 171.6 from 172.0, the mining index rose to 301.6 from 298.7, and the electric power and gas utilities index to 359.1 from 351.3.

Labor Income.—Canadian workers received about $1,745 million in April in the form of salaries and wages and supplementary labor income. The April estimate exceeded the March total of $1,715 million and the April 1962 total of $1,639 million. Labor income in the January-April period rose to $6,858 million in 1963 from $6,431 million in 1962.

Farm Production.—Canada's index of farm production (on the new base 1949=100) is estimated at 151.4 for 1962 and is the highest one recorded for this new series. This 1962 index compares with the previous record level of 141.4 in 1942 and the high levels of 140.8 in 1952 and 140.3 in 1956. The 1962 rise is attributable to the coincidence of large grain crops in western Canada and large outputs of livestock, poultry products and dairy products.

Wheat.—Supplies of wheat held by the four major wheat exporters for export and for carryover at the end of their respective crop years totaled 1,900.1 million bushels at June 1, 1963, compared with 1,918.4 million bushels a year previously. Reduced supplies in the United States and in Argentina more than offset larger supplies in Canada and in Australia. Supplies at June 1, 1963, in millions of bushels, and with figures for June 1, 1962 in parentheses, were as follows: United States, 1,214.0 (1,358.7); Canada, 516.6 (438.8); Argentina, 22.5 (37.2); and Australia, 147.0 (83.7).

Eggs.—Production of eggs, in Canada, declined to 37.5 million dozen in May 1963 from 39.0 million in May 1962. The January-May output dropped to 183.2 million dozen in 1963 from 188.0 million in 1962. The average number of layers dropped to 24.5 million from 25.3 million and the rate of lay per 100 layers to 1,853 from 1,865.

Farm Cash Income.—Cash income from farming operations received by Canadian farmers in the first three months of 1963 was estimated at $657.4 million, compared with $596.1 million in the first quarter of 1962 and $661.3 million in the corresponding quarter of 1961. These estimates include cash income from the sale of farm products, Canadian Wheat Board participation payments on previous years' grain crops, net cash advances on farm-stored grains in western Canada, and deficiency payments made under the provisions of the Agricultural Stabilization Act but not supplementary payments.

The higher income in the first quarter of 1963 can be largely attributed to higher returns from the sale of wheat, coarse grains, potatoes, cattle and calves, and poultry products, and to increased Canadian Wheat Board payments on previous years' grain crops. Small gains were also recorded for rye, fruits, vegetables, tobacco, and dairy products.

Canadian farmers also received $11.2 million as supplementary payments, all paid out under the provisions of the Prairie Farm Assistance Act. Total farmers' cash income from farming operations and supplementary payments thus reached a record figure of $668.6 million in the first quarter of 1963: corresponding figures for the first quarter of 1962 and 1961 were $662.0 million and $668.2 million respectively.

CORRECTION

In the last row of Tables 3 and 4, pages 61 and 62 of the June issue of *The Economic Annalist*, please read "Total cost per ton . . . " instead of "Total cost per acre . . . "

ON SELECTING A METHOD OF ESTIMATING FARM MACHINERY DEPRECIATION

D. F. HAYTHORNE

The need to charge depreciation as an item of expense arises from the realization that all capital items are ultimately subject to replacement by some new item which will do either the same job or a new job more efficiently. The old machine may have become less efficient because of its physical wear-out or it may have become relatively less efficient in comparison with newer, more technically advanced machines. Usually these processes operate together to lower the utility of the old machine. Once we recognize that the machine will eventually be disposed of at a value less than its cost we must also recognize that its original cost less salvage value is really a cost of doing business. The measurement of real capital cost and its allocation to the various years in the life of the machine are the calculations required in estimating the annual depreciation of an asset.

The word 'depreciation' has acquired several different meanings through its use in various contexts. All technical meanings of the word are derived from four basic concepts which are:[1]

1. Decrease in value.
2. Amortized cost.
3. Value difference between the old asset and a hypothetical new one.
4. Decrease in serviceability.

These concepts are not clearly defined nor are they mutually exclusive. For example, the percentage decrease in value may, in certain cases, be identical to the percentage decrease in serviceability. In these cases there would be no practical need to differentiate between these two concepts. However, these separate concepts do exist and the following discussion may help to clarify their differences.

1. The 'decrease in value' concept is the one most commonly used in everyday speech and is also the one found in most dictionary definitions. In this concept depreciation is the value decrease between two points in time regardless of the causes of this decrease. The value which decreases may be historical cost, market value, or value to the owner and it may be measured in current dollars or constant dollars but with any of these conditions the concept of depreciation in the sense of value decrease remains unchanged.

2. The 'amortized cost' concept is the one which prevails in the world of the accountant. This concept is evident in the following definition offered by the Committee of Terminology of the American Institute of Accounts:[2]

> "Depreciation accounting is a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any) over the estimated useful life of the unit (which may be a group of assets) in a systematic and rational manner. It is a process of allocation, not of valuation."

This definition stresses that from the viewpoint of the accountant the original cost of an asset is a prepaid operating expense which must be apportioned among the accounting periods during the useful life of the asset. Before this principle can be applied it is necessary to estimate the useful life of the asset and then select a method of apportioning the cost.

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[1] Grant, E. L., Depreciation, Ronald Press Co., New York, 1955, Cr. 2.

[2] Accounting Research Bulletin No. 22, American Institute of Accounts, 1944.

3. Depreciation as the difference in value between an old asset and a hypothetical new one is a concept which has led to some controversy. This concept is based on the notion that depreciation is really the difference between the present value of an old machine and the current cost of a new one. An appraiser uses depreciation in this context when he values an asset which may not be valued by market forces. He has an estimate of the current replacement cost of a similar asset which he depreciates according to the total expected life of the old asset to arrive at a current value for the old asset. Here the depreciation figure is only a hypothetical value which is used to assist in the valuation of the old asset. It is not a cost relating to the old asset. This concept is consistent with the use of replacement cost in calculating depreciation and, as we shall see later, provides a means of raising capital in an effort to offset the falling value of money in periods of inflation. The increase in capital is desired to maintain productive capacity during these inflationary periods. The problems raised by this approach will be discussed more fully later.

4. The fourth common meaning of depreciation is that of 'impaired serviceability'. As machines become functionally less efficient technical people often use the word 'depreciation' to describe the decrease in their functional utility. A percentage figure is often used to relate the efficiency of the old machine to its efficiency when it was new. It should be noted that this concept does not relate directly to the value of the machine.

Now that the basic concepts of depreciation have been reviewed we will examine their applicability to farm machinery.

1. The consideration of depreciation of farm machinery requires that we be concerned with value decrease, and in particular the manner in which it occurs, because many machines which are bought and sold are already partly depreciated. Therefore the prices at which these sales are made determines the capital cost of operating these machines. It is simply the difference between purchase price and sale price or scrap value over a given period of time which determines the amount of depreciation for that period. This ownership period may be very short or it may be the whole of the useful life of the machine. If it is anything less than the life of the machine, something must be known about how the value decreases in order to provide a realistic estimate of depreciation for items which may be owned for only part of their total useful life. From this it is apparent that the value change concept might be useful in the consideration of farm machinery depreciation.

2. The accountant's prepaid expense concept of depreciation has wide acceptance but it has been strongly criticized during periods of rapid change of price levels. This criticism takes the form of the argument that current depreciation charges should be computed in a way which somehow gives consideration to current general purchasing power and price levels.

3. If depreciation based on replacement cost is accepted as a method of accomplishing this, then the orthodox accounting concept of depreciation being an allocation of original cost must be seriously questioned. It is, of course, the concept which considers depreciation to be "the difference in value between an existing old asset and a hypothetical new one", which is the basis for the replacement-cost method of calculating depreciation. A number of practical difficulties arise when this approach is employed. One of them is that the replacement cost method assumes replacement with a similar asset. However, capital goods such as farm machines are seldom replaced with items identical to themselves as they are usually superseded by a superior product. There is also the possibility that a particular machine may not be replaced at all. Second if this method of computing depreciation is used then, to be consistent, it

should be used for periods of falling prices as well as for periods of rising prices. There would be an erosion of capital during periods of falling prices and therefore there would likely be serious objections to the use of this method during these periods. In other words, the replacement-cost method of calculating depreciation would likely be much more popular during periods of rising prices because it provides a means of raising capital whereas, during periods of falling prices it causes a depletion of capital.

A third objection is that even if this depletion of capital within the firm during periods of falling prices is acceptable, this method does not necessarily meet its objective of preserving the general purchasing power within the firm. Let us suppose, for the sake of illustration, that we have a combine capable of harvesting 100,000 bushels of grain during its lifetime. Let us suppose further that after this machine was purchased an innovation provides a combine with similar capabilities but at only half the cost. The question which arises if we are using the replacement-cost method is whether or not the depreciation charge should be cut in half on the first-mentioned combine. If the depreciation expense is reduced it will still be sufficient to replace the functional utility of the first combine but the general purchasing power invested in the original machine will only be half recovered. The answer might be that an attempt should be made to preserve the general purchasing power invested in a firm rather than simple productive capacity. However it becomes apparent that when we attempt to do this we cannot be certain of doing so even by using replacement-cost in computing depreciation.

One variation of the replacement-cost method is a procedure which is based on the lateral distribution of current replacement expenditures within a group of comparable firms. In this method the total machinery expenditure within this homogeneous group in any given year is divided by the number of firms to give the current average depreciation expense per firm. In other words, the current depreciation charge for an individual firm is a portion of the current replacement expenditure for the group as a whole.

This application of the replacement-cost method has the advantage of the use of current dollars in charging current depreciation but other advantages are hard to find. Perhaps its most serious disadvantage is that it disregards machinery inventory changes in arriving at net income. If inventories are generally increasing there would be a tax advantage given to this type of investment as the inventory increase would all be charged as an expense and therefore not subject to tax. I am of the opinion that changes in machinery inventories must be included before the real income of a firm can be determined. Another rather obvious inadequacy of this procedure is that it gives results which do not apply accurately to individual firms; especially if there is much variation between firms in their machinery inventory and the manner in which it is replaced. In the case of farm machinery there is a good deal of variation in these factors in spite of the best efforts to select similar farm units. The depreciation expense when calculated is an average of all farms in the group. When this average is combined with individual farm income and expense items to arrive at an individual farm's net income the result may not represent the desired concept of net income.

Before leaving the discussion of replacement-cost depreciation a comment on the over-all effects of original-cost versus replacement-cost methods by E. C. Brown, Associate Professor of Economics M.I.T. may be worth quoting:[1]

> "Our general conclusions are that historic-cost depreciation is more desirable than replacement-cost depreciation for tax determination. In our view,

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[1] Brown, E.C., Depreciation Adjustments for Price Changes, Graduate School of Business Administration, Harvard University, 1952, Ch. 1.

> tax equity should be based on differences in real income. Replacement-cost depreciation ignores these differences by providing a special exemption for certain taxpayers. Our analysis of the effects of the two methods on the stability of economic activity points to a slight favoring of historic-cost depreciation. From the longer run viewpoint historic-cost depreciation in a period of inflation is likely to result in a smaller amount of capital formation than would replacement-cost depreciation. Here we must weigh future against present consumer needs and consider the implications of this method of financing as opposed to alternatives. Finally, the problem of a satisfactory measure of replacement-cost depreciation seems unresolved."

D. T. Smith, Professor of Finance, Harvard University writes in the Foreword to Brown's book as follows:

> "(But . . .) if the objective is to charge depreciation on existing equipment adequate to cover replacement costs, extremely difficult estimates are necessary both as to prices and as to the probable technical efficiencies of new forms of equipment. Interim adjustments in the light of current knowledge will themselves inevitably have to be adjusted and readjusted as the actual time of scrapping and replacement draws near. An insistence on original cost in depreciation, with recognition that substantial financial problems may thereby be accentuated may be preferable to the confusion which would otherwise arise in income determination."

In view of the foregoing I am of the opinion that the problems in income determination which arise when the replacement-cost approach is used are sufficient to limit the usefulness of this concept to situations other than those involving farm machinery. A recognition that there must be some provision for replacement does not imply that this replacement be realized through the process of depreciation.

If we decide that the replacement-cost concept is not a useful one in the consideration of farm machinery depreciation and if we also exclude the 'impaired serviceability' concept because it is not concerned with the value of a machine then there remain the first two concepts considered; 'value decrease' and 'cost allocation'. These two concepts are not mutually exclusive and can be combined to retain the essential features of both. This combination is achieved simply by allocating cost according to value decrease or an estimate thereof. The problem is to allocate the cost rationally and systematically and still follow the actual value decrease in the machine. An examination of the various accounting methods of calculating depreciation reveals that the declining-balance method produces book value decreases which closely parallel the actual market value decreases. In other words, this method, which charges depreciation as a fixed percentage of present value, comes closest to allocating the cost of a machine according to observed value decrease. This position is supported by Hertel and Williamson in their farm machinery cost study of 1941. Their conclusion reads, in part,[1] as follows:

> "This study indicates that, for a number of implements, the depreciation curve is a constant-percentage curve which means the market value at the end of each year is 80 to 85 per cent of the value at the beginning of the year. The percentage is constant for each implement through its life".

A comparison of the declining-balance method with the straight-line method might reveal other reasons for favoring its use. The declining-balance method does provide a more accurate representation of the present market value than does the straight-line method and it thereby provides a more realistic basis for budgeting and business analysis. It also produces more realistic comparative cost figures for successive years particularly where used machinery is being bought and sold. Another feature of the declining-balance method is that it quite realistically makes some depreciation charge—even though it may be a small one—against all implements in service.

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[1] Hertel, J.P., and Williamson, Paul, Costs of Farm Power and Equipment, Bulletin 751, Cornell University Agricultural Experiment Station, 1941.

It is not essential to estimate the useful life of a machine when the declining-balance method is used and this might be another reason for favoring its use over a straight-line method. The useful or economic life of individual machines depends on a number of factors such as changes in types and methods of farming, changes in scale of farming operations, and changes in the type of machinery available. Economic life also depends to some extent on replacement cost. It may seem like a paradox to say that high replacement cost has a tendency to lower depreciation expense. This tendency occurs because the economic life of an old asset is extended when cost of replacement is high and shortened when replacement cost is low.

It is apparent, therefore, that it would be difficult to estimate the economic life of a machine with certainty. However, if depreciation calculated by the declining-balance method was based on an estimate of useful life, as it often is, an error in this estimate would be less significant than if the straight-line method had been used. This is simply because the depreciation charges during the latter years of a machine's life are smaller when the declining-balance method is used.

Another argument which favors the declining-balance method is that it is simpler to apply than a straight-line method. This ease of application is evident when it is applied to a group of implements of the same type, regardless of their age. To compute the depreciation charge for any year one need only multiply the initial value by the depreciation rate in current use. The product of half the rate and the value of the year's acquisitions and disposals is added if all machines bought and sold during the year are assumed to be used for half the year.

If the chief criteria for use in selecting a depreciation method are convenience and expense in accounting and the effect of accounting information on decisions and budgeting, then, as has been shown, the declining-balance method provides a definite advantage in both respects. A third basis for choosing a depreciation method might be that of relative tax advantage. However, the relative tax advantages among various methods do not depend primarily on the inherent characteristics of the methods themselves, but rather on specific provisions of the various tax laws and regulations.

George Terborgh of the Machinery and Allied Products Institute summarizes his evaluation of the declining-balance method as follows:[1]

> "Double-rate declining-balance depreciation appears to be the best practical remedy for the lags inherent in present methods. Judged by the standard for our correctly-computed realistic depreciation, it meets satisfactorily both the contour-conformity and time-distance tests. It is simple to operate, can be used with all types of depreciation accounts, and, subject to some difficulty in one case only, can be applied by either group of item accounting rules."

Terborgh recommends a rate double that of the straight-line method and another writer proposes a rate two and one-half times the straight-line rate.[2] The income tax laws of Canada and the U.S. both allow a maximum declining-balance rate which is double the straight-line rate. I am of the opinion that the declining-balance rate should not necessarily be directly related to the straight-line rate but rather calculated according to a definite formula. The formula in its simplest form is:

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[1] **Grant, E.L., Depreciation, Ronald Press Co., New York, 1955, Ch. 19.**

[2] Ibid.

$$R = 1 - \sqrt[n]{\frac{V_1}{V_0}}$$

where R is equal to the annual rate of depreciation expressed as a decimal; n represents the number of years involved; and V_1 and V_0 represent the final value and original value respectively.[1] The diminishing-balance method assumes, of course, that the final value is always greater than zero.

Depreciation Rates—Straight-Line and Diminishing-Balance Methods

Straight-line rate per cent		Diminishing-balance rate	Ratio diminishing-balance. Straight-line, No. 1	Ratio diminishing-balance to straight-line, No. 2	Years of useful life
No salvage value (1)	10 per cent salvage value (2)	10 per cent of salvage value			
3.5	3.15	7.7	2.20	2.44	28.6
4.0	3.60	8.8	2.20	2.44	25.0
4.5	4.05	9.8	2.19	2.43	22.2
5.0	4.50	10.9	2.18	2.42	20.0
5.5	4.95	11.9	2.16	2.40	18.2
6.0	5.40	12.9	2.15	2.39	16.7
6.5	5.85	13.9	2.14	2.38	15.4
7.0	6.30	14.9	2.13	2.37	14.3
7.5	6.75	15.9	2.12	2.36	13.3
8.0	7.20	16.8	2.10	2.33	12.5
8.5	7.65	17.7	2.08	2.31	11.8
10.0	9.00	20.6	2.06	2.29	10.0
12.5	11.25	25.0	2.00	2.22	8.0
20.0	18.00	36.9	1.85	2.05	5.0
33.3	30.00	53.6	1.61	1.79	3.0

In conclusion I would say that the declining balance method of calculating depreciation does satisfy the most useful and widely held concepts of depreciation and at the same time provides the simple and most realistic means for its calculation, particularly when applied to farm machinery.

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[1] If the difference between original cost and present replacement cost of similar machinery could be considered to be entirely the result of a change in the purchasing power of the dollar, then the substitution of replacement value (V_R) for original value (V_0) in the formula would indicate the depreciation rate relating to constant dollars.

SHORT-TERM VARIATIONS AFFECTING THE SUPPLY AND MARKETING PATTERN OF POULTRY PRODUCTS

J. T. HILL

The very nature of Canada's climate sets rigid patterns in the marketing of domestic farm products. Poultry production has not escaped this characteristic and marketing patterns for eggs and poultry meat reveal distinctive seasonal variations. These variations have been reflected in corresponding fluctuations in price as well as quality and size of the product marketed. They have also been part of a similar variation in consumption which may be either a cause of or an effect of the seasonality in supply. Perhaps it is a reflection of both of these factors.

To examine the importance of seasonal variations in the marketing of eggs and poultry meat, a number of monthly series of production, marketings and prices were subjected to twelve-month moving average calculations from which annual seasonal indexes were taken. These indexes provided the basis for the construction of seasonal indexes for each of the series examined. This article provides an analysis of the indexes constructed from these series.

Farm Production of Eggs.—The production of eggs shows a clearly defined seasonal pattern. December and January are the months of peak production. The chicks hatched in the previous spring have matured through the summer and provide the basis for the nation's laying flocks at year end. At this time the new hens are seven to nine months old and will be producing at their most efficient rate for the next five to six months. From January, egg production declines slowly through to May. May is generally the month when rate of lay per hen is highest. The age of the bird and the moderate weather combine to make this the most appropriate month for peak efficiency. During the following months the laying flocks decrease in size and the rate of lay declines.

Egg production decreases rapidly during the summer, reaching a low point in the month of August. This seasonal decline arises from a combination of factors of which the prevalence of purchasing replacement stock in the spring is of major importance. When a producer's hens have been in lay about 18 months, they are generally replaced by a new lot in the spring months. During the months of March, April and May, 60 per cent of the total yearly output of egg-type chicks takes place. Five years ago these months provided 65 per cent of the total hatch, indicating an attempt by some producers to even out the seasonality in supply by purchasing their replacement stock at other times of the year. However, the hatchery industry is still geared to this seasonality in the demand for chicks. For instance, 75 per cent of the chicks hatched for laying flock replacement in 1962 were hatched in the five-month period, February through June.

The seasonal decline in egg production can also be attributed to the continuing practice of culling hens. From the moment the pullets are placed in the laying house the weak and diseased birds are culled from the flock. This is good management practice and contributes a great deal to the profitable returns obtained by an egg producing enterprise. It keeps the flock strong and healthy and, by removing poor layers, it also increases the rate of lay of the flock and prevents feed waste. However, continuous culling and natural death tend to reduce the number of layers throughout the summer and result in a similar reduction in egg output. The number of eggs produced on farms begins to rise in September and October as the chicks placed in the spring begin to lay. The seasonal rise continues through the fall, reaching a peak in mid-winter.

Commercial Egg Marketings.—Egg marketings through grading stations registered by the Canada Department of Agriculture follow the same general seasonal pattern as farm production, with slight variations. Marketings represent about 50 per cent of total farm production and producers who send their eggs to these stations receive payment on the basis of the grade received for their shipment. The main difference in the seasonal pattern of commercial marketings, compared with farm production, occurs during the months of April, May, June. While farm production decreases steadily from a December-January peak[1], commercial marketings tend to rise to a second peak in May before declining seasonally to a low in September.

This double peak characteristic for commercial supplies stems from the heavy demand for hatching eggs in the spring, an industry trait mentioned earlier. As this demand subsides the large output of the hatchery supply flocks is channeled back into the commercial trade, increasing the volume of egg gradings.

A less significant difference, but nevertheless a perceptible one, is the slight lag, of about one month, in the seasonal decline in marketings compared with farm output. The seasonal low point is reached in September and the recovery is not as pronounced. This difference can most likely be attributed to the structure of the commercial egg supply flocks compared with farm flocks in general. Large producers tend to take advantage of high prices for eggs which occur during the fall by purchasing their chicks earlier in the year or by force-moulting their flocks.

Table 1.—Eggs: Ten-year Seasonal Index of Production, Commercial Marketings and Prices, Canada, 1952-53 to 1961-62

Month	Farm production	Commercial receipts at registered grading stations	Weighted average price to producers all grades
January	111	116	85
February	100	96	91
March	110	105	99
April	108	108	95
May	105	115	90
June	95	101	93
July	88	92	106
August	86	87	111
September	87	87	114
October	95	90	116
November	103	95	108
December	112	108	92

Egg Prices.—The price examined in this series, the weighted average price to producers for all grades, was considered most appropriate since it provided a national average price and included all grades of eggs. It thus provides a much more convenient series for comparison with production and commercial gradings, eliminating the regional bias and the reference to specific grade which so often is a drawback when price quotations of this sort are used for describing national trends.

The seasonal pattern for egg prices is virtually a mirror image of marketings, falling when marketings rise and rising when marketings fall. This illustrates dramatically the unhindered operation of a free competitive market in eggs, and it is to the credit of the egg industry as a whole that despite the increasing pressure for economic planning in several phases of marketing

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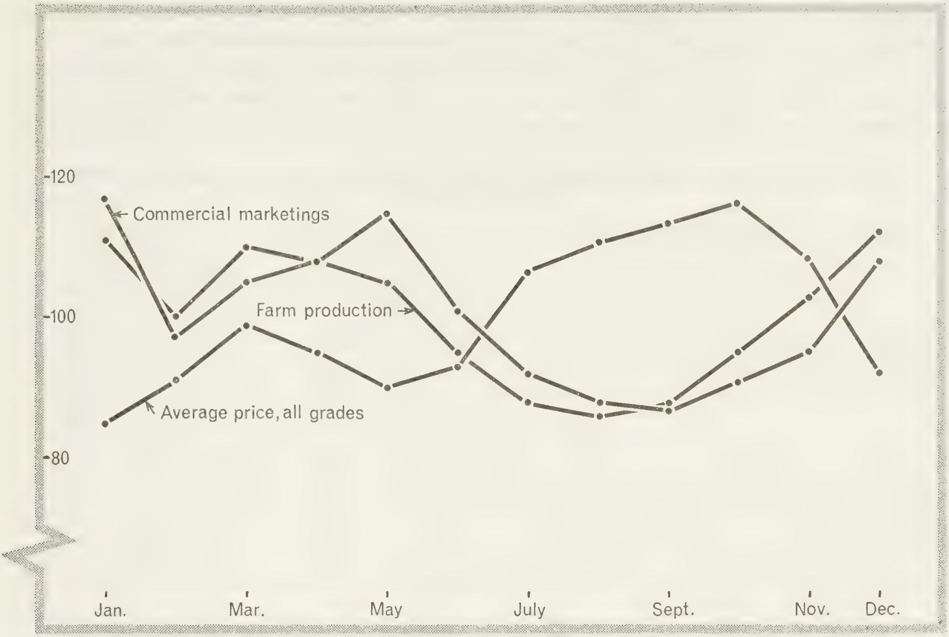
[1] February shows a marked dip because of the fewer number of days in the month.

FIGURE 1.—EGGS: TEN-YEAR SEASONAL INDEX OF PRODUCTION, COMMERCIAL MARKETINGS AND PRICES, CANADA, 1952-53 TO 1961-62



producers can still gauge their supplies on the basis of demand and price through the competitive price mechanism of the open market.

Egg Quality and Size.—The seasonal pattern for the production and marketing of eggs, while reflecting the movements in the supply of all eggs throughout the year does not reveal the internal differences in the seasonal patterns of specific egg grades. In order to investigate these movements, three grades were selected, Grade A Large, Grade A Small and Grade B. The first two reflect high quality but differences in size. The Grade B eggs reflect low quality.

Grade A Large eggs follow a seasonal pattern that is very similar to overall marketings except that the amount of variation is much more pronounced from peak to trough. It is understandable that the pattern should fluctuate along lines similar to the total when one considers that Grade A Large eggs represent close to one-half of the eggs graded in registered premises. In the five-year period, 1958-62 for example, Grade A Large eggs represented 48.8 per cent of the total eggs graded in Canada.[1]

The small sized Grade A eggs have a pronounced and widely fluctuating seasonal pattern. Marketings are very low in February, March and April and rise rapidly to peaks in September and October from which they again drop off quickly to the late winter early spring trough. This pattern is the reverse of the one for Grade A Large and is of much greater range. It reflects the lay of the pullets in the national flock. Since most replacement stock is purchased in the spring, the first eggs laid by the young six-month old pullets are of small size but generally of premium quality. The large amount of small eggs marketed in the August to November period corresponds with the time when there are a large number of pullets in the laying flock and egg size is relatively smaller.

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[1] Graded in registered grading stations. See the 1962 Annual Poultry Market Review, p. 3, for complete data on egg grades since 1951.

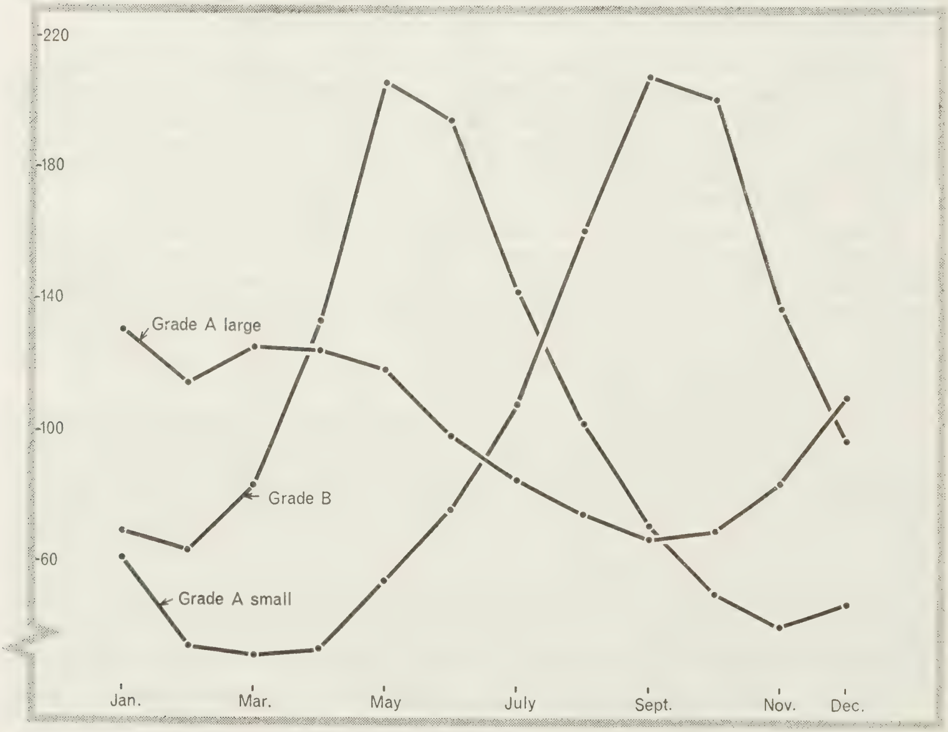
The seasonal marketing pattern for Grade B eggs fluctuates almost as greatly as that for Grade A Small size. However, in this case, the period of low marketings is from October to February and the period of peak supply for this grade runs from April through July, the warm months of the year.

To examine this seasonal pattern, it is important to examine the characteristics of a Grade B egg as distinct from a Grade A egg, and in light of these characteristics, investigate the major causes for these differences. An egg may

Table 2.—Ten-year Seasonal Index of Commercial Egg Marketings in Canada, by Grade, 1952-53 to 1961-62

Month	Grade A Large	Grade A Small	Grade B
January	130	61	69
February	114	34	63
March	126	31	83
April	124	33	133
May	118	54	206
June	98	76	194
July	85	108	142
August	74	161	102
September	67	208	71
October	69	201	50
November	84	137	40
December	110	97	47

FIGURE 2.—TEN-YEAR SEASONAL INDEX OF COMMERCIAL EGG MARKETINGS IN CANADA, BY GRADE, 1952-53 TO 1961-62



be graded as a "B", if, when candled, it shows a distinct yolk outline, if the yolk is slightly oblong and floats freely within the albumen of the egg when twirled rather than showing a small round yolk which maintains its position in the centre of the egg as a Grade A.[1] In addition, although there must be no evidence of green in the yolk nor any meat or blood spots, there may be some slight germ development. The air cell in a Grade B egg is larger than that of a Grade A.[2] These are the relevant internal properties. Shell quality is also of importance. If an egg shows small spots of dirt or stain, is slightly abnormal in shape, and has rough areas or ridges but is otherwise of sound construction, it will Grade B.

Egg quality is a major factor in the maintenance of a profitable egg enterprise. One only has to look at the difference in prices received for a Grade B egg and for a Grade A Large egg. This difference, roughly 10 cents per dozen, can make a great deal of difference to an egg producer's income, especially during the summer when supplies of eggs are relatively plentiful. Since environment is the primary factor controlling quality and the seasonality in the supply of lower quality eggs, the producer has more control over his own profit potential in this regard than is sometimes realized.

It is true that after nine to ten months of lay a hen begins to wear out. Her ability to produce good strong shells and thick albumen deteriorates rapidly. Good feed practice can postpone this deterioration, but as the hen continues to age this becomes more difficult. However, an aging flock is not the most important reason for the heavy volume of B eggs in summer. It is due to environment, i.e., weather and management. During the warm months of late spring and summer eggs are left ungathered too long. In 70 to 80 degree weather there is a rapid deterioration in the internal quality of the egg. Humidity tends to increase the likelihood of soiled and dirty eggs. On many farms the spring and summer is a period when outdoor activity is important. If the egg enterprise is a sideline the hens may be neglected during the day, increasing the hazards which newly laid eggs are subject to. An additional factor which contributes to lower egg quality during the summer is the practice which many producers follow of letting their flocks range in the open. When the hens eat insects and grass, dark yolked eggs are inevitable, and when candled the heavier yolk shadow results in a Grade B.[3]

The seasonal indexes discussed above for eggs are based on national marketing figures. There are some variations from region to region but the general pattern is much the same. For example, in the Prairie provinces where close to one-quarter of the eggs graded are B's, C's or Cracks, the seasonal fluctuations show a greater range of variation compared with marketings in Central Canada or the Maritimes where there are a large number of commercial producers.[4] These latter regions reveal seasonal variations that are very similar to the national pattern. However, British Columbia does differ from the rest of Canada by showing exceptional stability in egg marketings throughout the year.

Broiler Chicken Marketings.—Ten years ago the supply of chicken showed a significant seasonal pattern due to the emphasis that was placed in those days on heavy roasting chicken and fowl. The supply of milkfed or heavy roasting chicken depended primarily on the late winter and spring hatch and marketings were generally concentrated in the October-November period. Fowl meat which represented a large proportion of chicken processed in 1950 (57.5 per cent) depended upon the degree to which producers culled their laying flocks. Extensive culling has generally taken place in September and October so that fowl marketings contributed to the heavy receipts during the fall of the year.[1]

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[1] For a detailed outline of the specifications for each grade, see Schedule A of the Shell Egg Regulations, Office Consolidation, p. 23.

[2] Not in excess of 1/8 inch for Grade A, 3/8 inch for Grade B.

[3] Corn has also created a problem of dark yolked eggs. Producers who have found corn an economical feed substitute for wheat have to be careful that dark yolks do not lower the grade of their eggs.

[4] For a more thorough discussion of the seasonal differences in egg marketings by region, see The Economic Annalist, December 1954, p. 132.

With the advent of poultry meat specialization and with it the popularity of the lightweight broiler chicken, this seasonality in marketings no longer appears. A five-year (1958-1962) seasonal index of monthly broiler marketings was calculated which revealed that there was a fairly steady supply of broilers throughout the year, although marketings were heavier during the warmer months of the year, May through November. The peak months were August and September but as can be seen from the index itself, there was less than nine points difference throughout the seven-month period of heavy marketings.

A characteristic of the broiler industry which makes it unique among the many farm enterprises pursued today is the very short production cycle. Broiler production can be subject to very short variations in supply. Since it takes eight or nine weeks to grow a broiler chicken to the three-pound average live weight generally preferred by consumers,[2] any change in supply, if warranted by price or demand relationships, can be made quickly. However, although there are no physiological limitations to changes in supply, there may be legal, i.e., contractual limitations which extend the pattern. Broiler producers generally have contractual agreements with feed suppliers, processors or hatcheries which bind the producer to a specified volume of production in any one year. If this is the case, the supply pattern is of a more rigid nature than the time period required to finish the birds to market weight would indicate.

Although broiler chicks are placed on farms throughout the year, producers recognize the seasonal demand for this product and plan their orders for new birds accordingly. Consumers seem to prefer broilers during the warm months of the year, particularly during hot summer weather. As a result marketings drop off noticeably in December and continue low until May.

Turkey Marketings.—Every housewife can tell you at what time of the year she is most likely to find plentiful supplies of turkey. Turkey production in Canada is traditionally geared to the Thanksgiving and Christmas markets. As a result, it is not surprising that a seasonal index calculated for the years, 1953-1962, reveals a strong seasonal fluctuation with values ranging from 17 in February, to a high of 351 in December, a difference of 334 points. In recent years, however, the variation has not been as great and the peak month for marketings has been shifting from December to November and October. Peak marketings were reached in December for the years 1952 to 1956, in November for 1957 to 1959 and in October for the past three years (1960 to 1962). The five-year seasonal index shown in Table 3 illustrates this change. The range of variation is now 256 points and the peak month is November.

The turkey industry has followed the traditional pattern of purchasing turkey poults in large numbers in the spring. These poults are grown both on range and in confined quarters for six to eight months depending on the weight desired for market. Broiler turkeys are grown by some producers for year-round consumption but the amount of heavy turkey processed in the October to December period continues to account for about 60 per cent of the annual supply. The supply of broiler turkey does indicate a moderately stable seasonal

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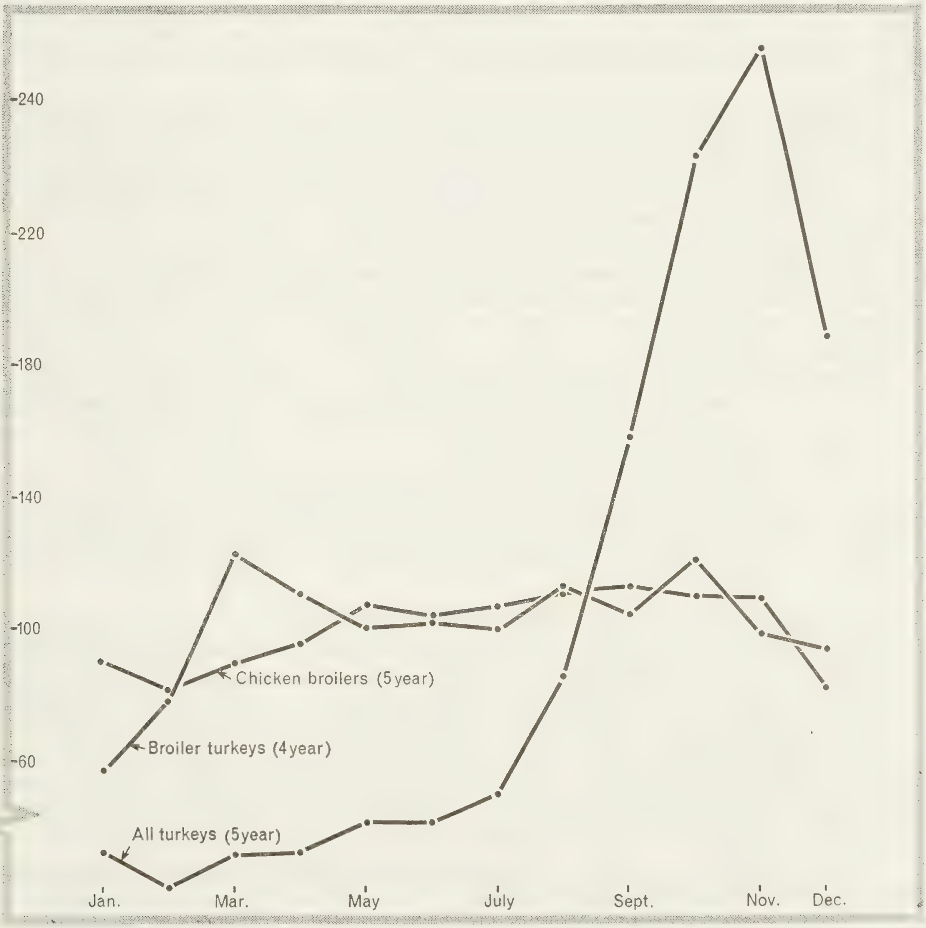
[1] For a comprehensive survey of seasonal price movements before and immediately after the war, see an article on Seasonal Variations in the Prices of Poultry Meat, The Economic Annalist, December 1950, p. 134.

[2] The three-pound bird will generally weigh about 2½ to 2¾ pounds eviscerated.

Table 3.—Seasonal Indexes for Poultry Processed in Canada, 1953-1962

Month	Chicken broilers	Total turkey		Broiler turkey
	Five-year period (1958–1962)	Ten-year period (1953–1962)	Five-year period (1958–1962)	Four-year period (1959–1962)
January	90	31	32	57
February	82	17	21	78
March	90	21	31	122
April	96	22	32	110
May	107	43	41	100
June	104	31	41	102
July	107	34	49	100
August	111	54	85	112
September	113	107	158	105
October	110	190	244	120
November	110	300	277	99
December	82	351	189	94

FIGURE 3.—SEASONAL INDEXES FOR POULTRY PROCESSED IN CANADA, 1953-1962



pattern, especially during the eight months, March through October. The low month of January is 65 index points below the March peak, considerably less variation than that ascribed to total turkeys. The increasing popularity of light weight turkey has helped to moderate the seasonal variation in marketings in recent years. It is not uncommon to find turkey of all weights (fresh or frozen) in retail stores at all times of the year. However, the traditional Thanksgiving and Christmas seasons will continue to provide the largest demand for turkey meat for some years to come.

COMPARISON OF FARM PRACTICES ON ONE-SECTION FARMS ON REGINA HEAVY CLAY SOILS, 1940, 1951, and 1962

B. H. SONNTAG

The purpose of this article is to compare changes in farm practices and certain aspects of farm organization on a particular type of farm. The area chosen is that characterized by Regina Heavy Clay soils in the Regina area of southern Saskatchewan. Comparison will be made of one-section farms for three separate years, 1940, 1951, and 1962.

In 1940, farm business management data were collected in this area, on all sizes of farms. Data on land use, land tenure, farm labor, livestock numbers, farm debt and other items were enumerated. Twenty-five records from one-section farmers were randomly selected from the sample for purposes of this article.

Similarly, in 1951, farm business data were collected from a large number of farms in this area on Regina Heavy Clay and Weyburn Loam soils for a study of farm practices.[1] Data on cultural practices, land utilization, farm power, labor, livestock and other items were enumerated. Twenty-five records obtained from farmers on one-section farms on Regina Heavy Clay soils were randomly selected from this group for the comparisons which follow.

In 1962, a farm organization study was conducted in R.M. No. 128.[2] Data on cultural practices, machinery inventories, land use, land tenure, labor, debt, livestock and other items, as well as on expenses for the year 1962 were recorded.

Comparisons made in this article relate to land tenure, land use, cultural practices, machine use, labor, livestock numbers and farm debt. Comparisons are made for only two of the three years in some cases where specific data were not collected for each of the three years.

Land Tenure.—The ratio of rented to owned land did not vary appreciably. The ratios were 34:66, 36:64, and 32:68 in 1940, 1951 and 1962, respectively (Table 1). The number of fully owned and fully rented farms also stayed relatively constant.

Land Use.—Land use underwent some very significant changes since 1940. Perhaps the most significant is the change in the ratio of summerfallow to total cropland acres. This ratio increased from 23.8 per cent in 1940 to 33.3 per cent in 1951, and 38.8 per cent in 1962 (Table 2). Although no information on crop rotation is available from the 1940 records, the 23.8 per cent figure for summerfallow suggests a four-year rotation. The 33.3 per cent figure for 1951 would suggest a three-year rotation. In 1962, some of the farmers were following a two-year rotation, others a three-year rotation and some were in the process of converting from a three-year to a two-year rotation.

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[1] Farm Practice on the Weyburn Loam and Regina Heavy Clay Soils of Saskatchewan, Ragush M. and F. Cline. Unpublished Report.

[2] Sonntag, B. H., Changes in Farm Organization on High Productivity Soils in the Dark Brown Soil Zone, 1962 (in preparation).

Table 1.—Tenure of One-Section Farms on Regina Heavy Clay Soil, 1940, 1951, and 1962

Tenure	1940	1951	1962
		— no. of quarters —	
Owned	66	64	68
Rented	34	36	32
		— no. of farm units —	
Fully owned	12	15	15
Fully rented	6	7	6

Coarse grains acreage decreased from 51.3 acres per farm in 1940 to 24.8 acres per farm in 1951, and to 8.2 acres per farm in 1962 (Table 2). It is difficult to account for this decrease. Several factors are possibly involved here. An important factor may be the increase in summerfallow acreage. This means that there is less stubble crop and since coarse grains are usually grown on stubble in this area this could explain, in part, the reduction in the coarse grains acreage. Another factor influencing the decrease in oats acreage may be the decrease in livestock numbers. Oats acreage decreased after 1951. This coincides with a reduction in livestock numbers and the number of farms with livestock in this area. This factor may also be responsible for the decreased barley acreage. An additional factor with respect to barley may be the market situation for malting barley. Oats is grown primarily for feed, but barley has also been grown from time to time as a cash crop.

Cultural Practices.—Important changes have occurred in the last 10 years with respect to farming practices. One of the most apparent changes is the replacement of the one-way and drill, as seeding implements, by the discer. All of the farmers in the 1962 sample seeded with the discer, whereas in 1951 seeding was done with several implements, discer, one-way, drill and cultivator (Table 3).

Table 2.—Land Use on One-Section Farms on Regina Heavy Clay Soil, 1940, 1951 and 1962

Use	1940	1951	1962
		— average acres per farm —	
Wheat	413.4[a]	380.8[a]	266.3
Durum	—	—	98.0
Oats	23.0	20.8	5.8
Barley	28.3	4.0	2.4
Flax	8.4	5.4	10.5
Summerfallow acres	148.1	205.7	243.4
Total cropland acres	**621.2**	**616.7**	**626.4**
Unimproved, hay, pasture and farmstead	14.8	19.0	10.4
Total acreage	**636.0**	**635.7**	**636.8**
Ratio of summerfallow/total cropland	23.8	33.3	38.8

[a] Acreage includes durum wheat.

Table 3.—Comparison of Seeding Operation on One-Section Farms on Regina Heavy Clay Soils, 1951, and 1962

Implement	1951 crop		1962 crop	
	Summerfallow	Stubble	Summerfallow	Stubble
	— per cent of all farms —			
Discer	40.0	44.0	100.0	72.0
Drill	16.0	—	—	—
One-way	40.0	48.0	—	—
Cultivator	4.0	—	—	—
Per cent of farms with	100.0	92.0	100.0	72.0

Preseeding tillage operations were not important in this area in 1951, and were not carried out in 1962. Only 12 per cent of the farmers did any work on their land before seeding their 1951 summerfallow crop and only four per cent did any work before seeding their 1951 stubble crop.

Postseeding cultivation is done primarily with the drag harrow and packer. There has been no noticeable change in this practice in the past 10 years.

Summerfallow operations are difficult to compare since the type and frequency of operation depend on such variable factors as rainfall, weed growth and trash cover. Some general observations can, however, be made. Fall work on stubble is not general. Some 20 per cent of the farmers do a very light operation in the fall after harvest if weather conditions permit. The number of operations in any given year depends on weather conditions, weed growth, trash cover and other factors. Thirteen farmers had 5-6 operations in 1962, and only seven had 5-6 operations in 1951 (Table 4). The cultivator and rod weeder have replaced the disc-type implement to a considerable extent for summerfallow operations. In 1962, 44 per cent of the farmers used the cultivator for the first operation compared with 12 per cent in 1951. The second operation was performed with the cultivator or rod weeder on 92 per cent of the farms in 1962, compared with 36 per cent in 1951 (Table 4).

Table 4.—Type of Implement Used for Summerfallow Operations, One-Section Farms on Regina Heavy Clay Soils, 1951 and 1962

Operation	Discer	Cultivator	One-way	Rod weeder	Harrow	Other	No. of farms with
	— per cent of all farms[a]						
1st 1951	40.0	12.0	40.0	—	—	4.0	24
1962	68.0	44.0	—	—	—	—	25
2nd 1951	4.0	36.0	8.0	—	48.0	—	24
1962	16.0	72.0	—	20.0	4.0	—	25
3rd 1951	8.0	24.0	24.0	4.0	24.0	—	21
1962	20.0	16.0	—	76.0	4.0	4.0	25
4th 1951	4.0	16.0	4.0	4.0	28.0	—	14
1962	16.0	20.0	—	60.0	8.0	4.0	23
5th 1951	4.0	20.0	4.0	—	—	—	7
1962	—	16.0	—	44.0	—	—	13
6th 1951	—	4.0	—	—	8.0	—	3
1962	4.0	—	—	4.0	—	—	2

[a] Where the percentages in any single row added horizontally are greater than 100 per cent, it means that several farmers used more than a single implement for that operation.

In 1951 the harrow was used to a great extent (48 per cent of the farmers did their second operation in 1951 with the harrow) but in 1962 it was only an insignificant part of the machine complement used for summerfallow operations (Table 4).

Another important change was in the use of chemical weed control. Comparison of data from the 1951 and 1962 studies shows that in 1951 only 28 per cent of the farmers in the area sprayed for weed control, whereas in 1962, 100 per cent of the farmers sprayed their crops for weed control.

The use of fertilizer is not general in this area. Only 32 per cent of the farmers in 1951 and as little as 12 per cent in 1962 reported the use of some fertilizer.

Harvesting operations followed the same pattern in 1962 as in 1951. The crop is first swathed and then combined. Flax is often straight combined if there is no heavy weed infestation.

Machine Use.—Two significant changes occurred with respect to size and type of tractors. The first is the trend toward larger tractors and the second is the change from gasoline engines to diesel engines. In 1962, nineteen of the farmers had five-plow tractors whereas in 1951 only four farmers had tractors of this size (Table 5). Diesel tractors were found on 11 farms in 1962, and on only two in 1951 (Table 6). The trend toward larger tractors was also apparent when comparing the tractors used in 1940, with those in 1951 and 1962. The 1940 data, while not specific as to tractor size, indicate that most of the tractors were in the three-plow size group.

Labor Use.—There has been a marked decrease in farm labor requirements since 1940. The important change to be pointed out is the average decrease in hired labor from 3.5 months per farm in 1940 to 1.0 months per farm in 1962. Another significant change is in the number of farms with hired labor, 24 in 1940 and 16 in 1962. Differences are also evident in the use of unpaid family labor with an average of 2.8 months per farm in 1940 and only 0.7 months per farm in 1962 (Table 7).

Livestock Numbers.—The average number of livestock per farm and the number of farms with livestock have both declined. Farms with no livestock numbered one in 1940, four in 1951 and 15 in 1962 (Table 8). Today fewer farmers depend on their own livestock for meat and dairy products. This trend away from livestock is probably associated with the movement off the farm to urban centers. Many farmers in this area live in urban centers, especially during the winter months, and operate their farms from there. Farming in this way precludes the maintenance of livestock on these farms.

Farm Debts.—Farm debts have been divided into three groups. Long-term debts are those which are usually incurred for land purchases and have a repayment period of five or more years. Farm Credit Corporation loans were the typical type of long-term debt encountered. Intermediate term debts are those with a repayment period of five years or less. These consist mainly of Farm Improvement loans for machinery and equipment purchases. Short-term debts are those which are to be repaid in a year and consist of short-term bank loans, credit arrangements with local retailers, etc.

There was a significant reduction in the average debt per farm as well as a decrease in the number of farms with debt. In 1940 only 16 per cent of the farms were debt-free, whereas in 1962, 68 per cent of the farms studied were debt-free (Table 9).

Farm Capital, Receipts and Expenses.—Table 10 is a summary of the income, capital and expenditure items for a group of 25 one-section grain farms on Regina Heavy Clay soil in 1962.

Table 5.—Sizes of Tractors on One-Section Farms, Regina Heavy Clay Soils, 1951 and 1962

Plow-size of tractor[a]	First tractor		Second tractor	
	1951	1962	1951	1962
2	2	—	7	—
3	12	1	5	4
4	7	5	—	3
5	4	19	—	2

[a] Tractors rated as 3–4 plow tractors were included in the three-plow size group. Similarly the 4–5 plow tractors were included in the four-plow group.

Table 6.—Types of Tractors on One-Section Farms, Regina Heavy Clay Soils, 1951 and 1962

Type of tractor	First tractor		Second tractor	
	1951	1962	1951	1962
Gas	23	14	[a]	[a]
Diesel	2	11		

[a] All second tractors were gas tractors.

Table 7.—Farm Labor on One-Section Farms, Regina Heavy Clay Soils, 1951 and 1962

	Labor				Farms with hired labor
	Hired	Unpaid	Operator	Total	
		— months —			
1940	3.5	2.8	11.2	17.5	24
1962	1.0	0.7	9.6	11.3	16

Table 8.—Livestock Numbers on One-Section Farms, Regina Heavy Clay Soils, 1951 and 1962

Year	Average number per farm				Farms with no livestock
	Horses	Cattle	Hogs	Poultry	
1940	2.1	3.6	3.1	66.2	1
1951	0.9	4.9	5.2	89.8	4
1962	—	2.6	1.4	53.6	15

Table 9.—Farm Debt on One-Section Farms, Regina Heavy Clay Soils, 1940 and 1962

Type of loan	1940		1962	
	Unpaid balance	Number with	Unpaid balance	Number with
Long term	8,161	13	1,208	4
Intermediate	486	18	414	6
Short term[a]	1,072	19	[a]	—
No. of farms debt-free		4		17

[a] Short term debts in 1962 were primarily 1962 fuel and repair bills which were paid in full after the year's operations were completed. These debts were not enumerated.

Farm capital is made up of land, buildings, machinery and equipment and livestock. Real estate values used in Table 10 are farmers' estimates of the sale value of the farms they were operating. Values were calculated on a full-ownership basis. Machinery and equipment value was the replacement value minus the accumulated depreciation of the machinery and equipment inventory on these farms. Livestock value was calculated from the market value of livestock on the farms.

Receipts are made up of crop sales, hail insurance claims, livestock items, custom work and miscellaneous farm income. Home-consumed livestock products and an imputed value of house rent are also included in the farm receipts figure. Crop sale figures are based on the farmer's yield and land use estimates at an average price for an average grade. Other income figures are farmer's estimates of these items.

All cash expense figures except taxes are farmer estimates. Tax figures are calculated from land assessments and mill rates obtained from the municipal office. The straight line depreciation method was used to determine depreciation expense for buildings and machinery and equipment.

The major expense items were $1,462 for machinery depreciation and $1,347 for fuel, oil, repairs, grease, etc. (Table 10). Assuming a five per cent charge on capital as an investment cost the average total expense, per farm, excluding the operator's labor, would be $7,608 (Table 10). The two main cost items are (a) real estate costs which are 44 per cent, and (b) machine and equipment costs which are 43 per cent of all expenses. Real estate costs include building depreciation, taxes, insurance, building repairs and five per cent investment charge. Machinery and equipment costs include depreciation, custom work, fuel, oil, repairs, etc., and a five per cent investment charge.

Real estate and machinery and equipment depreciation costs are essentially fixed costs. Equipment and machinery expenses are also fixed to a very large degree. The portion of total costs that could be considered variable is very small. Hence, the cost situation bears little relationship to the yield level. Harvesting expenses, including a portion of the expenditures on custom work and hired labor, are somewhat lower in years of the low yields, but these form only a small part of total costs.

Table 10.—Farm Capital, Receipts and Expenses, One-Section Farms, Regina Heavy Clay Soils, 1962

Farm capital			*Farm receipts*	
Land	40,554		Crop sales	20,925
Buildings	5,652		Livestock sales	60
Equipment and machinery	9,945		Livestock inventory change	— 20
Livestock	209		Livestock products	8
Total	56,360		Custom work	22
			Miscellaneous farm income	286
Cash expenses			Total	21,281
Real estate[a]	3,099			
Crop[a]	489		Farm productivity used in the home and house rent	573
Livestock	53			
Equipment and machinery	1,671		Total farm receipts	21,854
Custom work	173			
Hired labor	169		All expenses	7,608
Miscellaneous	201			
Total cash expenses		5,855	Return to operator and family labor	14,246
Depreciation expenses				
Buildings	291			
Machinery	1,462			
Total		1,753		
All expenses		7,608		

[a] Including investment cost at 5 per cent.

The 1962 income figure is very much higher than long-time average income figures for farms of this size in this area. The income figure is based on potential grain sales, according to farmer estimates of yields and land use for 1962. Crop yields in this area were much higher in this area in 1962 than the long-time average. The large volume of durum wheat priced at $2.14 per bushel also had a significant bearing on this income figure.

Income figures calculated on the basis of long-time average yields for the area and 1962 land use, costs, and prices result in much lower net returns. On the basis of 1941-50, 1951-60, 1941-60 and 1921-60 average yields, the calculated returns averaged $4,953, $3,617, $4,314, and $2,420 per farm respectively. Average wheat yields for these periods were 21.3, 19.0, 20.2 and 16.8 bushels per acre respectively.

PUBLICATIONS OF THE ECONOMICS DIVISION

Costs of Production in Agriculture, 1962. A summary of Selected Studies Conducted in Recent Years by Various Agencies. Furniss, I. F. Ottawa, May 1963. Mimeo. pp. ii+24.

A tabular presentation of production cost data, from selected studies by the federal and provincial governments and by producers' organizations. Part I summarizes data, from the most recent studies, on a commodity basis. Part II converts data, from earlier studies by the Ontario Department of Agriculture, to 1962 price levels.

A General Classification of Land for Agricultural Use, by Townships, Manitoba. Garland, S. W. and T. O. Riecken.

In co-operation with the Manitoba Department of Agriculture and Conservation, Winnipeg. March 1963. pp. iii + 44 + 3 maps.

A preliminary report from a broader study that will supply an economic classification of the lands of Manitoba. This broader study is designed to serve as a guide in the development of land policies that will help solve the problems of the agricultural industry.

The land is classified chiefly on the basis of the estimated net average value of agricultural production in each township of occupied land. The report itself is organized into three main parts: Economic Classification of Land in Manitoba; Present Use of Cropland in Manitoba; and The Economic Rating of Township Areas.

OTHER PUBLICATIONS

A Study of Trans-Canada Air Lines. The first twenty-five years. Ashley, C. A. The Macmillan Company of Canada Limited, Toronto. 1963. pp. x+75. Price $1.75.

One "of a number of studies planned as part of a book on Crown corporations", this particular study is chiefly concerned with legislation and government controls affecting Trans-Canada Air Lines and with their organization, administration and operations.

Economic Growth and Economic Policy. A paper presented by Harry G. Johnson, Professor of Economics, University of Chicago, as the J. S. McLean Memorial Lecture, in February 1963, when the author was serving as J. S. McLean Visiting Professor at the Ontario Agricultural College, Guelph, Ontario pp. 27.

In this paper Johnson focuses attention on the nature of economic growth, policies that promote growth in a free enterprise society, and especially the nature of policies that might be called for in Canada.

However, he believes that mass unemployment, not "growth", has been the outstanding problem of the last five years in Canada. His outline of a policy that will promote economic growth in a free enterprise economy is as follows:

(*a*) "reform of the tax system to eliminate elements that inhibit growth and promote inefficiency";

(*b*) "a series of measures designed to improve the efficiency of the market system, particularly by improving the mobility of labour between regions and between occupations" and;

(*c*) "the inauguration of government-sponsored research on a large scale into the prospective economic growth of the economy and the implications of growth for the individual sectors and activities of the economy".

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ECONOMICS DIVISION

M. E. ANDAL, Acting Director

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935–39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	264.0	290.8	235.1	130.7	126.2	186.1
1962										
Jan.	237.0	233.3	195.6	271.0	266.7	283.4	233.6	129.7	124.8	179.1
Feb.	237.1	233.6	196.4	270.8	265.7	....	....	129.8	125.0	181.4
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	183.9
April	237.4	233.7	195.4	272.0	266.1	293.1	235.8	130.3	125.8	184.0
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.1
June	240.3	243.3	200.7	285.8	272.8	....	....	130.5	125.6	186.3
July	241.3	249.6	203.7	295.6	277.8	....	....	131.0	127.0	186.7
August	242.6	238.0	171.6	304.3	262.9	295.8	236.0	131.4	128.4	188.7
Sept.	241.9	231.8	165.8	297.8	257.9	....	....	131.0	126.8	188.8
Oct.	241.7	232.1	165.9	298.2	255.9	....	....	131.5	127.2	189.1
Nov.	242.2	232.7	165.1	300.3	254.9	....	....	131.9	127.7	189.6
Dec.	242.2	230.0	167.2	292.8	254.0	....	....	131.9	127.8	189.7
1963										
Jan.	242.9	227.0	170.7	283.3	251.3	290.8	237.6	132.0	129.0	189.4
Feb.	242.7	224.1	174.3	273.8	250.1	....	....	132.1	129.4	191.1
Mar.	242.4	222.1	175.4	268.8	247.4	....	....	132.1	128.9	194.0
April	242.8	219.0	171.4	266.6	243.6	298.8	238.3	132.3	128.9	194.3
May	244.4	221.9	171.9	271.9	244.8	....	....	132.3	128.3	195.6
June	245.8	227.5	174.9	280.1	250.2	....	....	132.8	129.7	195.5
July	246.2	229.7	173.4	286.1	253.2	....	....	133.5	132.5	....
August	244.7	227.6	169.6	285.6	252.1	....	....	133.9	133.2	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living component. 1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

Investment.—According to the mid-year review of "Private and Public Investment in Canada, Outlook 1963," prepared by the Department of Trade and Commerce, capital spending plans for 1963 now involve total outlays of $9.3 billion. This investment program would exceed capital investment in 1962 by seven per cent.

Total outlays for new construction are expected to be close to $6.2 billion and would thus exceed corresponding outlays in 1962 by six per cent. Plans for the purchase of new machinery and equipment call for total expenditures of $3.15 billion and, if realized, will exceed 1962 expenditures for the same purpose by nine per cent.

Business investment, social capital spending and housebuilding will all be higher in 1963 than in 1962. Canada's productive capacity is being expanded and modernized at an accelerated rate. If the expected increase in business investment is realized, it will be the sharpest increase since 1957. This increase in business investment, allied with a higher level of spending for housing and social capital purposes, will exert favorable effects on employment and production in the building materials, construction, and capital goods industries.

External Trade.—Total commodity exports from Canada rose to about $607.4 million in July 1963 from $561.2 million in July 1962; imports rose to $586.8 million from $559 million. The export balance on merchandise trade rose to $20.6 million from $2.2 million.

January-July exports rose to $3,841.5 million in 1963 from $3,574.3 million in 1962; imports dropped slightly to $3,703.3 million from $3,706 million. The resulting export balance of $138.1 million is in sharp contrast with the import balance of $131.6 million in the first seven months of 1962.

Exports to and imports from various countries or groups of countries were as follows:

	Total exports		Imports	
	1962	1963	1962	1963
Month of July	— millions of dollars —			
United Kingdom	74.0	100.3	50.0	50.8
Other Commonwealth and preferential rate countries	31.6	35.1	28.9	33.3
United States	338.9	354.4	387.3	392.7
Others	116.7	117.6	92.9	109.9
Total, Commonwealth and preferential rate countries	105.6	135.4	78.8	84.1
Total, others	455.6	472.0	480.2	502.7
Grand total	**561.2**	**607.4**	**559.0**	**586.8**
January-July Period				
United Kingdom	500.4	576.1	340.0	297.9
Other Commonwealth and preferential rate countries	180.0	229.3	170.5	192.4
United States	2,144.8	2,238.6	2,606.4	2,586.6
Others	749.2	797.5	589.1	626.4
Total, Commonwealth and preferential rate countries	680.4	805.4	510.5	490.3
Total, others	2,894.0	3,036.1	3,195.5	3,213.0
Grand total	**3,574.3**	**3,841.5**	**3,706.0**	**3,703.3**

Industrial Production.—Canada's seasonally adjusted index of industrial production (1949=100) dropped only to 195.5 in June from 195.6 in May 1963. The index for the January-June period was almost 5.5 per cent higher in 1963 than in 1962.

Wheat.—Supplies of wheat remaining on or about July 1, 1963 in the United States, Canada, Argentina and Australia totaled 1,821.5 million bushels, as compared with 1,830.7 million bushels a year earlier. Higher supplies than a year earlier in Canada and Australia were more than offset by smaller supplies in the United States (carryover stocks only) and Argentina. July 1 supplies, in millions of bushels and with figures for 1962 in parentheses, were as follows: United States, 1,189.4 (1,321.9); Canada, 489.4 (412.8); Argentina, 23.1 (32.5); and Australia, 119.6 (63.5).

Total shipments of wheat and wheat flour in terms of wheat from the U.S., Canada, Argentina and Australia totaled 1,118.7 million bushels in the first 11 months of the August-July 1962-63 crop year, which is 13 per cent less than the 1,286.8 million bushels shipped in the corresponding period of the preceding year. Shipments of wheat and flour in terms of wheat, by the four countries, in the August-June period, in millions of bushels and with figures for 1962 in parentheses were as follows: United States, 588.7 (659.2); Canada, 309.2 (336.2); Argentina, 57.2 (85.2); and Australia, 163.6 (206.2).

Dairy Products.—Fluid milk production in Canada declined only 0.4 per cent to 2,096.0 million pounds from July 1962 to July 1963 and only 0.3 per cent to 11,268.0 million pounds from the 1962 to the 1963 January-July period. It declined by 2.3 per cent to 2,194.9 million pounds in June 1963 from 2,247.7 million pounds in June 1962 and 0.3 per cent to 9,171.7 million pounds in the January-June period of 1963 from 9,201.7 million pounds in the corresponding period of 1962.

Sales of fluid milk and cream, in milk equivalent, declined by one per cent to 502.4 million pounds from June 1962 to June 1963 but rose by one per cent to 3,024.3 million pounds from the 1962 to the 1963 January-June period.

Less creamery butter and skim milk powder but more cheddar cheese, ice cream mix and evaporated whole milk were produced in July and in January-July 1963 than in the corresponding periods of 1962.

July production totals, with figures for 1962 in parentheses, were as follows: creamery butter, 46.1 million pounds (47.7 million); cheddar cheese, 18.1 million pounds (14.7 million); ice cream mix, 3.3 million gallons (2.9 million); evaporated whole milk, 36.3 million pounds (34.2 million); and skim milk powder, 20.8 million pounds (24.0 million).

January-July totals, also with figures for 1962 in parentheses, were as follows: creamery butter, 203.5 million pounds (207.8 million); cheddar cheese, 72.3 million pounds (63.4 million); ice cream mix, 14.2 millions gallons (13.5 million); evaporated whole milk, 188.3 million pounds (179.8 million); and skim milk powder, 105.4 million pounds (112.8 million).

Production of process cheese from cheddar and other hard or cream cheese base totaled 6.2 million pounds in June, 5.2 million in July 1963, and 3.9 million in July 1962. Production in the January-July period rose to 39.5 million pounds in 1963 from 36.0 million pounds in 1962.

Poultry.—Poultry numbers on Canadian farms rose from 72.2 million on June 1, 1962 to 73.8 million the corresponding date of 1963. Totals for different kinds of poultry, and with figures for June 1, 1962 in parentheses, were as follows: hens and chickens, 66,530,000 (64,915,000); turkeys, 6,573,000 (6,648,000); geese 309,100 (283,000); and ducks, 376,100 (383,000).

Eggs.—The egg output, in July 1963, was estimated at 32.4 million dozen, which represents a decline of 6.9 per cent from the output of 34.8 million dozen in July 1962. The average number of layers dropped to 23.1 million from 24.7 million and the rate of lay per 100 layers to 1,699 from 1,708. The egg output in the January-July period declined to 246.9 million dozen in 1963 from 258.0 million dozen in 1962.

CHANGES IN FARM ORGANIZATION ON MEDIUM AND LARGE GRAIN FARMS ON LOW PRODUCTIVITY SOILS IN THE DARK BROWN SOIL ZONE OF SASKATCHEWAN, 1957 AND 1962

M. Ragush

The area selected for study of changes in farm organization on farms on low productivity soils in the Dark Brown soil zone of Saskatchewan was first visited in 1957 and revisited in 1962. The study area lies within 50 miles to the west and south of Saskatoon and consists predominantly of light textured soils classed as marginal and submarginal for wheat production. Information on land use, production practices, capital inventories, and annual budgets of major types of farms in the area was obtained and analyzed in both 1957 and 1962 to provide a continuous picture of changes and trends that had taken place during the five-year interval.

Of the three groups of farms studied in 1957 (12 small, 25 medium and 45 large grain farms) and the four groups of farms studied in 1962 (18 medium grain, 15 medium grain-cattle, 13 large grain and 18 large grain-cattle farms) only the medium and large grain farms were comparable in size and type in the two study years. Consequently, these were the only groups that had the data required for an analysis of changes in farm organizations. The small grain farms were excluded from the sample in 1962 because the number of homogeneous two-quarter section farms was too small for an adequate sample. The medium and large grain-cattle farms were added to the sample in 1962 because of the growing importance of the beef cattle enterprise in the survey area. The latter groups of farms will be excluded from the present discussion of changes and trends that took place within the farm unit during the period from 1957 to 1962.

The period covered by the studies was from "after harvest" 1956 and 1961 to "after harvest" 1957 and 1961, respectively. Receipts from grains in the 1957 study were for crops planted and harvested in 1957 and in the 1962 study for crops planted and harvested in 1962.

Crop Production

Land Use.—The proportion of improved land to the total land area was high on all farms in both 1957 and 1962 (82 to 92 per cent). Wheat was the main crop on all farms in the two study years, although the proportion of acres in wheat of the total acres sown to grain was higher in 1962 than in 1957 (Table 1). The proportion of acres sown to wheat of total acres sown to grain was 61 per cent on both medium and large farms in 1957 and 78 and 72 per cent on medium and large farms in 1962 respectively. With the exception of rye, there was a corresponding decrease in the number of acres sown to other grains in 1962. The removal of the grain marketing quotas in 1962 may have had some effect on the higher acreage sown to wheat.

The acreage in summerfallow crops compared with stubble crops had increased during the five-year period, especially on medium farms. The medium farms in 1957 were predominantly on a three-year crop rotation (fallow-crop-crop) and in 1962 on a two-year crop rotation (fallow-crop). The large farms were on a two-year crop rotation in both 1957 and 1962.

Wheat Yields.—The amount of wheat harvested per seeded acre in 1957 was about 40 per cent higher than the amount harvested in 1962. Wheat averaged 14.6 bushels per seeded acre on medium grain farms and 15.2 bushels on large grain farms in 1957, or 13 per cent higher than the long-time average for the 1918-1961 period. In 1962, wheat averaged 8.8 and 8.5 bushels on medium and large grain farms respectively, or 27 per cent lower than the long-time average.

The low yield in 1962 was the result of low moisture reserves and lack of rainfall during the growing season.

Crop Production Practices.—The comparison of farm practices related to grain production in 1957 and 1962 includes cultural practices and crop services. The following are the cultural practices and crop services studied:

(1) **Preseeding.**—About the same proportion of land was worked prior to seeding on farms of the same size in the two study years. There was a difference, however, in the amount of pre-seeding cultivation between the medium and large farms. The acres covered with at least one pre-seeding operation of the total seeded acreage on medium and large farms in 1957 and medium and large farms in 1962 was 76, 59, 75, and 64 per cent respectively. The disc type of implement (discer and oneway) was the most common type of implement used for this purpose. The second choice of implement in 1957 was the plough and in 1962 the cultivator.

(2) **Seeding.**—The drill was used more extensively for seeding than the discer and oneway in both 1957 and 1962. The proportion of the total seeded acreage sown with a drill was 66 per cent on medium farms and 61 per cent on large farms in 1957 and 56 per cent on medium farms and 72 per cent on large farms in 1962. The use of the drill on stubble crops increased substantially during the five-year period.

Table 1.—Land Utilization, Medium and Large Grain Farms, Low Productivity Soils, Dark Brown Soil Zone of Saskatchewan, 1957 and 1962

	1957		1962		Change, 1957–1962	
	Medium	Large	Medium	Large	Medium	Large
	— per cost of cropland acres —				— per cent —	
Durum:						
fallow	1.2	2.1	3.7	1.1	208	−48
stubble	0.4	0.5	....	0.7	−100	40
Wheat on:						
fallow	24.3	23.4	36.6	36.0	51	54
stubble	15.5	9.6	5.8	5.3	− 63	− 45
Oats on:						
fallow	1.0	1.8	1.9	1.4	90	− 22
stubble	4.7	3.3	4.4	1.8	− 6	− 45
Barley on:						
fallow	3.1	4.1	1.0	1.6	− 68	61
stubble	5.8	3.9	0.7	2.7	− 88	− 31
Flax on:						
fallow	2.0	2.6	....	....	−100	−100
stubble	3.3	2.4	0.3	....	− 91	−100
Rye on:						
fallow	....	1.8	....	0.6	....	− 67
stubble	2.4	1.2	....	4.1	−100	242
Rape on:						
fallow	....	0.9	....	....	....	−100
stubble	0.2	0.6	....	....	−100	−100
Improved pasture	3.6	3.0	3.3	4.7	− 8	57
Improved hay	....	....	1.2	0.1	100	100
Summerfallow	32.5	38.8	41.1	39.9	26	3
Total cropland	100.0	100.0	100.0	100.0	....	....
	— acres per farm —					
Total cropland	598.4	1,074.8	555.1	1,030.8	....	....
Unimproved and farmstead	48.6	243.5	111.6	160.2	....	....
Total farm area	647.0	1,318.3	666.7	1,191.0	....	....
Number of farms	25	18	45	13	....	....

(3) **Post-seeding.**—This operation consisted of either pulling the packer behind the seeding implement or harrowing as a separate operation after seeding. Some farmers used the rod weeder instead of the harrow for post-seeding. About half the summerfallow crop acreage and one-third the stubble crop acreage had at least one post-seeding operation. The percentage of the total acres covered and the kind of implements used for post seeding was the same in both 1957 and 1962.

(4) **Summerfallowing.**—There was no major change in the number of operations on summerfallow in the two study years. The range in the proportion of acres covered of the total acres in summerfallow by each operation for the four groups of farms was: first operation, 99 to 100 per cent; second operation, 96 to 100 per cent; third operation, 79 to 91 per cent; fourth operation, 35 to 49 per cent; and the fifth and over, 12 to 27 per cent.

The extent of use of the blade-type of implement (cultivator and noble blade) compared to the disc type (discer and one-way) had increased during the five-year period especially on the second summerfallow operation. The wider use of the blade-type of implement in 1962 may be due in part to the unusually low trash cover following the 1961 crop failure.

(5) **Harvesting.**—Use of the swather, before combining, was the common harvest practice in 1957 and straight-combining the common harvest practice in 1962. The per cent of acres covered with the swather of the total seeded acreage was 67 per cent in 1957 and 36 per cent in 1962. The main reason for the lower use of the swather in 1962 was the unfavorable harvest weather. The farmers started harvest by swathing the crop but the delay in harvest caused by rain provided ample time for the grain to ripen and thus made straight combining possible.

(6) **Rate of Seeding.**—The rates of seeding were lower for all grains in 1962. Seventy-five per cent of the wheat acreage in 1957 was sown at 1.5 bushels to the acre compared with 50 per cent at 1.5 bushels and 50 per cent at 1.25 bushels per acre in 1962. Seeding rates for other grains were higher in 1957 but the difference was less pronounced. The low moisture reserves in the spring of 1962 may be partially responsible for the low seeding rates.

(7) **Varieties of Grains.**—The main variety of durum sown in 1957 was Stewart and in 1962 Ramsay. The first choice of hard wheat on all four groups of farms was Thatcher. The second choice of hard wheat on medium farms was Rescue in 1957, Canthatch in 1962; and on large farms in both 1957 and 1962, it was Selkirk. The main variety of oats on all four groups of farms was Rodney. Other highly preferred varieties of oats were Fortune, Garry, Victory and Ajax. Hannchen barley was the most popular variety of barley especially in 1962. Montcalm barley was the second choice in 1957, but by 1962 the Hannchen barley had almost completely replaced Montcalm. The main varieties of flax, rye, and rape grown were Redwood, Prolific and Golden respectively.

(8) **Fertilizer.**—The use of commercial fertilizer was not a common practice in the study area. The proportion of the total seeded acreage covered by commercial fertilizer on the 1957 sample farms was 8.2 per cent and on the 1962 sample farms, 11.5 per cent. The fertilizer was used on summerfallow crops exclusively.

(9) **Weed Spray.**—Use of weed spray increased very significantly during the five-year period. Twenty-six per cent of the total seeded acres on the 1957 sample farms was covered by weed spray and in 1962 the acreage covered was 76 per cent, or an increase of 51 per cent for the five-year period.

(10) **Grasshopper Spray.**—The grasshopper infestation was very light in 1957 and fairly severe in 1962. In the 1957 study, only six of the 45 large farms and none of the medium farms sprayed for grasshoppers and the acreage covered was very small. In the 1962 study, 87 per cent of the farms used grasshopper spray and the proportion of the acres covered of the total seeded acres was 31 per cent on medium farms and 67 per cent on large farms.

(11) **Seed Purchases.**—About half to two-thirds of the farmers in 1957 and 1962 had purchased some seed grain. There was no major difference in the acres covered with purchased seed in the two study years. The proportion of acres covered with purchased seed of the total seeded acreage ranged from 13 to 18 per cent for the four groups of farms. Barley and flax were the most common grains purchased in 1957 and oats was the most common grain purchased in 1962.

(12) **Seed Treatment.**—Most farmers (83 to 96 per cent) treated part or all of the seed grain for seed-borne diseases and wireworms. The proportion of the acres treated of the total seeded acres on medium and large farms in 1957 was 66 and 58 per cent and on medium and large farms in 1962, 60 and 80 per cent respectively. The dual purpose treatment (seed-borne diseases and wireworms combined) was the common type used in both 1957 and 1962. The use of this type of treatment had increased by about 15 per cent during the five-year period.

(13) **Custom Seed Cleaning.**—The use of local elevators and seed cleaning plants for cleaning seed grain had doubled during the five-year period. The proportion of farmers that used custom seed cleaning facilities and the acres covered by custom-cleaned seed grain increased from 30 per cent in 1957 to 60 per cent in 1962.

(14) **Hail Insurance.**—There was no change in the number of farms that bought hail insurance in the two study years. The proportion of farms that had all or part of the crop insured in 1957 was 84 per cent and in 1962, eighty-three per cent.

Farm Budgets

Farm Capital.—The total value of farm capital (land, buildings, machinery and livestock) on farms of the same size were about the same in 1962 as in 1957; however, on a per improved acre basis the total investment was slightly higher in 1962, especially on medium farms (Table 2). The main reason for the increase was higher land values. Land values had increased about five to six dollars (over 20 per cent) per improved acre during the five-year period. Machinery investment had remained unchanged on medium farms and decreased 27.3 per cent per improved acre on large farms. Taking account of the increase in price levels for the period, it would appear that farmers for some reason, financial or otherwise, were not making the purchases necessary to maintain constant inventory values of machinery. The drought in 1961 and 1962 and the resulting low incomes from grains undoubtedly curtailed the purchases of new machinery.

Farm Receipts.—Crop receipts were lower in 1962 than in 1957 because of the lower yields of grain in 1962 mentioned previously. Receipts from crop sales per acre of cultivated land on medium farms were 32 per cent lower and on large farms 28 per cent lower in 1962.

Incomes from livestock (Table 2) include the sale and consumption of livestock and livestock products and also the changes in inventory values of livestock. The livestock on the sample farms was used primarily for home use, although some farms had nominal incomes from sales of livestock and livestock products.

The main sources of miscellaneous income were P.F.A.A. payments, acreage payments, claims for hail damage and income from custom work. P.F.A.A. payments and acreage payments were higher in 1962 and claims for hail damage and income from custom work were about the same in both years.

Farm Expenses.—With the exception of crop expenses, all items of cash expenses per acre of cropland for farms of the same size were about the same in the two study years (Table 2). The higher crop expenses in 1962 were mostly for crop services (weed spray, grasshopper spray, weed treatment, etc.). The expense for labor was for hired labor only. Operator and family labor were the main sources of labor supply and these were not shown as an expense unless a cash transaction was involved. The increase in real estate expenses (land taxes and building repairs) was due to higher municipal mill rates and higher price levels of building materials.

Table 2.—Farm Budgets, Medium and Large Grain Farms, Low Productivity Soils, Dark Brown Soil Zone of Saskatchewan, 1957 and 1962

	1957		1962		Change, 1957–1962	
	Medium	Large	Medium	Large	Medium	Large
	— dollars per acre of cropland —				— per cent —	
Farm capital:						
Land	26.86	24.75	31.46	30.76	17	24
Buildings	4.85	4.10	5.52	4.10	14	none
Total real estate	31.71	28.85	36.98	34.86	17	21
Machinery	17.30	14.81	17.46	11.22	1	−24
Livestock	1.54	1.47	1.70	0.94	10	−36
Total farm capital	50.55	45.13	56.14	47.02	11	4
Receipts:						
Crop	8.78	8.74	5.98	6.29	−32	−28
Livestock	1.43	0.80	0.94	0.81	−34	1
Miscellaneous	0.83	0.72	2.18	1.27	163	76
Total farm income	11.04	10.26	9.10	8.36	−18	−19
Expenses:						
Cash farm expenses						
Real estate	0.78	0.56	0.82	0.61	5	9
Crop	0.48	0.47	0.65	0.61	35	30
Livestock	0.29	0.19	0.21	0.30	−28	58
Machinery	1.72	1.39	1.61	1.25	− 6	−10
Labor	0.15	0.21	0.07	0.11	−53	−48
Miscellaneous	0.20	0.12	0.33	0.14	65	17
Total cash	3.62	2.94	3.69	3.02	2	3
Depreciation						
Buildings	2.13	1.76	2.43	1.55	14	−12
Machinery	0.31	0.25	0.47	0.32	52	28
Total depreciation	2.44	2.01	2.90	1.87	19	− 7
Total farm expenses	6.07	4.95	6.60	4.89	9	− 1
Return to operator and family for capital and labor	*4.97*	*5.31*	*2.50*	*3.47*	*−50*	*−35*
Acres in cropland	*598.4*	*1,074.8*	*555.1*	*1,030.8*	....	....
Number of farms	*25*	*18*	*45*	*13*	....	....

Total depreciation expenses on machinery and buildings increased 19 per cent per improved acre on medium farms and decreased seven per cent per improved acre on large farms during the five-year period.

Financial Summary.—The measure of net returns was the "Return to operator and family for labor, management and capital". The net returns on medium farms were $2,975 per farm in 1957 and $1,495 in 1962, or a difference of 53 per cent. On large farms the net returns were $5,716 per farm in 1957 and $3,587 in 1962, or a difference of 35 per cent. The lower net returns in 1962 were largely due to the lower crop sales in 1962.

Summary of Changes and Trends

Some of the adjustments and changes in farm organization, production operations and financial handling of the farms mentioned previously in this report were temporary management adjustments to the physical and economic conditions that prevailed during the study year. For example, the lower seeding rates of grain in 1962 compared with 1957 were a temporary measure employed to minimize the effect of low moisture reserves in the soil on crop production. Temporary adjustments of this nature were not reliable indicators of future trends and thus not listed in the summary of changes and trends.

Several changes occurred during the period from 1957 to 1962 that were of a more permanent nature. For example, the extensive use of weed spray was expected to continue at the 1962 level even under conditions similar to 1957. The following are the changes and trends in the study area that were expected to continue:

(1) larger but fewer farms in the study area,

(2) further growth in the cattle population,

(3) increase in acres of summerfallow crop and a corresponding reduction in stubble crops.

(4) use of drill and especially press drills in preference to discers and one-ways for seeding purposes,

(5) use of blade-type of implements (cultivators and noble blades) on second and succeeding summerfallow operations in preference to disc-type implements (discer and oneway),

(6) extensive use of weed spray,

(7) use of grain elevators and seed cleaning plants in preference to operator-owned seed cleaning facilities,

(8) extensive use of dual purpose seed treatment for control of seed-borne diseases and wireworms,

(9) increase in land values,

(10) increase in the number of diesel tractors in preference to gas tractors particularly on large farms,

(11) further increase in the number of farm dwellings with water pressure systems,

(12) wider use of crop services such as weed, insect and disease control and quality improvement of seed grains and consequently higher farm costs.

Other aspects of farm organization and farm practices were examined for changes as well but this examination showed no change for the five-year period or the changes appeared to be influenced by the prevailing climatic conditions in the study year. Further interpretation of the changes may be possible in the future when additional periodic data under varying physical and economic conditions are made available from the continuing farm organization studies.

THE UNITED STATES FOOD STAMP PROGRAM

CHARLOTTE I. JOHNSTON

A Food Stamp Plan, under authority of section 32 of Public Law 320, August 24, 1935, was in operation from 1939 to 1943. Authority for the present pilot Food Stamp Program is based on the same legislation, as amended. The current program began in late May, June and July 1961 in eight economically depressed areas, one of which was the city of Detroit, in seven widely separated states. After experience gained in more than a year, the program was offered to some additional areas throughout the country. Where the Food Stamp Program is instituted, it replaces the Department of Agriculture's Direct Distribution Program donations to needy persons of certain foods acquired in price-support and surplus-removal operations. The latter program had become more popular earlier in 1961 when butter, canned meats, peanut butter, dried eggs and several other items were added to the list of donated foods which already included flour, cornmeal, rice, dried milk and lard.

Purpose.—The twofold purpose of the Food Stamp Program is to improve the diets of the large number of families with low incomes and inadequate diets, and to improve the market for agricultural products. The original plan of 1939 to 1943 provided to low-income families foods which were currently in surplus, whereas the present program embraces all kinds of food produced in the United States. Consequently, it does more to improve the diets of low-income families as surplus foods do not necessarily provide the nutrients which they are most likely to lack. Although agriculture is expected to benefit under the new program, the market for foods in surplus may not be immediately strengthened as it was under the former arrangement.

Operation.—The households eligible to participate in the Food Stamp Program are those (a) which receive federal assistance (because members are old, blind, disabled or are dependent children), or certain state or local assistance, and (b) other households having less than specified levels of income and liquid assets. (The levels are based on family size but vary according to the standards of the individual states in the administration of their own welfare assistance programs.) Individual households are certified to be eligible by the state public welfare agency which administers federally-aided public assistance programs in the state, or by agencies designated by it,[1] in accordance with a plan which the agency negotiates with the Agricultural Marketing Service of the Department of Agriculture.

To insure that the food purchased by recipients under the Food Stamp Program shall not replace agricultural products which would normally be purchased, a certified family, with some income, that wishes to participate must buy a number of coupons. The value of the coupons depends on the income, size and composition of the family and reflects the family's normal level of food expenditure. The family then receives additional coupons free of charge whose value is also determined by family income, size and composition. The coupons, in units of 50 cents and two dollars and in books of 20-, 10-, 3-, and 2- dollar value, replaced the stamps of the original "stamp" plan. Coupons may be exchanged in any participating store for any food except bananas, tea, coffee, cocoa, alcoholic beverages, prepared foods eaten on the premises, and foods not produced in the United States. To participate, food stores must apply for authorization and be accepted by the Agricultural Marketing Service. The retail stores redeem at face value the coupons given in exchange for food, either from authorized wholesale food firms or, as do the wholesalers, directly from banks.

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[1] In the City of Detroit the Department of Public Welfare is named in the regulations respecting the Food Stamp Program of the Department of Agriculture as the certifying agency for those households which are not receiving benefits under a federally-aided program.

Promotion.—Efforts have been made to make the program more effective by enlightening the public about its purpose, the low-income families about its benefits and procedures, and retailers and wholesalers about its requirements. Posters have been displayed and leaflets distributed, for recipients, explaining the purpose of the program and the various regulations, and for participating retailers and wholesalers, giving pertinent information in the form of a list of questions and answers. Letters have been sent to grocers and meetings held with retail trade associations. The food industry has encouraged retailers and wholesalers to follow the program honestly. In each community of the pilot areas, welfare workers and newspapers have explained the program and urged recipients to abide by the regulations. Education in nutrition, to help families select their food wisely, has been carried on by welfare and education groups. A special guide, which directs attention to plentiful foods of high nutritional value and low cost, is sent monthly by the Department of Agriculture to retail stores in the Food Stamp Program.

Cost.—During the first year of operation about 135,000—140,000 persons received food coupons each month. The value of the average recipient's coupons was $21 for which he paid $13, about 62 per cent of the total value, each month. The Government's contribution in free coupons was $13.2 million, or about $96 per person assisted during the year. It is estimated that the administrative costs of such a program would be not more than three per cent of the Federal Government's total program costs, once the expansion phase is completed.

Compliance.—Observance of the regulations concerning the use of coupons has been highly satisfactory, probably because the program is being carried on in depressed areas where the need for food is great and where governmental agencies and food retailers are likely to give full co-operation, and also because close supervision is being given to the redemption of coupons. Running totals of the coupons redeemed by each store are computed to check that the coupons are being used properly. A watch is kept for a number of redemptions which is large considering the size and type of store and for a sudden increase in number of redemptions by a store.

Appraisal by Various Groups.—The Department of Agriculture has conducted a series of special studies to determine attitudes toward the program, and to measure its economic and dietary effects.

After the Food Stamp Program had been in operation for some time, surveys were made among families of moderate and higher incomes, participating and non-participating low-income families, food retailers and local welfare workers in Detroit and in a rural coal-mining area. Most of the people interviewed in each group said that they liked the Food Stamp Program and wished that it be continued.

Over 90 per cent of the participating families liked the Food Stamp Program better than the direct donation program because of the wider variety of food offered. About one-third of the non-participating eligible families said that they could get along without the additional food. Others were not sure of their eligibility or did not wish to spend as much money for food coupons as was required.

Practically all the local welfare workers thought that the Food Stamp Program was generally more successful than the commodity donation program in increasing food consumption among low-income families. Six of the eight state public welfare administrators, who were interviewed in a survey conducted by the Department of Health, Education and Welfare, preferred the Food Stamp Program to the commodity donation program.

Retail Sales.—Under the Direct Distribution Program the donated foods are processed and distributed by the United States Department of Agriculture and its agents; under the Food Stamp Program the foods pass through commercial channels, as it would not be feasible to handle by direct distribution the many unrestricted items of domestic production obtainable under the Food Stamp Program.

A survey of a sample of food stores made it possible to evaluate the effect of the program on the retail food business. The survey was carried out in a four-week period in April-May, before the beginning of the program, and in another four-week period in September-October in all the pilot areas, as a control sample for seasonal adjustments. In Detroit the survey was conducted not only in low income but also in higher income areas.

The dollar value of food sales, adjusted for seasonal factors, increased in the areas as a whole by eight per cent[1]. The increase was smaller in Detroit than in the other areas.

The smaller stores benefited more than did the larger ones. In September-October coupons were worth 12 per cent of the total sales in the period, of stores with annual sale of less than $50,000, and the percentage decreased to five as the annual volume of business rose to $1 million or over.

The average change from spring to fall in seasonally-adjusted sales of groceries was nine per cent, of produce 7.9 per cent, and of meat 7.2 per cent. However, there was great variability from area to area especially with regard to produce sales. Apparently, a much larger quantity of fruit and vegetables was home-grown or bought outside stores in some areas than in others.

Consumption.—To measure the changes in quantity and value of food used and the effect on nutritional status resulting from the Food Stamp Program, surveys were conducted in Detroit and in rural and urban[2] Food Stamp Program areas of Pennsylvania during April-May and September-October in 1961. The households surveyed were the same in both periods, had annual incomes of less than $5,000, lived at the same address in both periods and their eligibility for the program was unchanged from one period to the next. The three classes of household surveyed were: (a) those eligible for the Food Stamp Program and participating in it in September-October; (b) those eligible, but who did not participate, and (c) those not eligible.

In both areas the value of the food used by group (a) increased from spring to fall, in Detroit by 34 per cent and in the Pennsylvania rural area by nine per cent, although in both areas retail food prices, measured by an index based on the prices and quantities of food used by group (c) had declined in the intervening period. Qualifying non-participants were, on the other hand, using foods during September-October of less money value than during the April-May period.

Percentage increases by the Food Stamp Program participants, in consumption per person, from the first to the second survey period were greater for some foods than for others. The greatest changes in the major food groups were for fresh vegetables (124 and 171 per cent) and fruits (68 and 78 per cent) in Detroit and in the rural area, respectively. Part of the increase, of course, resulted from the difference in season and availability of fresh produce in the two periods. The increases were larger in the rural area, partly because of the larger home or local production of food. The consumption of fluid whole milk rose by 86 and 50 per cent in the city and rural area respectively. The consumption rates of evaporated milk, ice cream and sherbet and cheese also increased. However, the consumption of dry skim milk, which had been obtained free under the Direct Distribution Program, was much reduced and the intake per person of all dairy products on a non-fat solid basis remained almost unchanged in Detroit and fell by 20 per cent in the rural area. The consumption rate of butter, also received under the previous program, declined and that of margarine rose. The families taking part in the Food Stamp Program evidently did not feel that the difference in the two products was worth the difference in price.

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[1] Re-surveys in the areas after the Program had been operating for about nine months indicated that the sales gains were being maintained.

[2] The results of the survey in the urban area have not yet been published.

In Detroit the Food Stamp Program families increased their consumption, per person, of meat and of poultry by more than 33 per cent; in the rural area the quantity of meat consumed per person remained unchanged but poultry consumption rose by nearly 66 per cent.

In each area the consumption of bakery products rose by about 30 per cent, at least partly as a result of the withdrawal of free flour.

In Detroit, increases in quantities of beverages and miscellaneous foods, used per person, were in the 30 to 40 per cent range.

Despite their gains in consumption the participating families were spending less in the second survey period for meats and other animal products, fruits and vegetables, beverages and miscellaneous foods than were families with higher incomes.

Nutrition.—Since one of the major purposes of the Food Stamp Program is to make the diets of low-income families not only more attractive but more nutritious, the question of improvement in nutrition brought about by the changes in consumption is of great interest.

The United States National Research Council recommends the intake of certain quantities of each of eight nutrients by individuals of various age, weight and sex classes. A "good" diet is one that supplies a family daily with at least 100 per cent of the recommended allowances of each of the eight nutrients. In April and May about 28 per cent of the people who later participated in the Food Stamp Program in both Detroit and rural Pennsylvania had good diets. In September and October, however, of those who were getting Food Stamp Program food, 48 per cent in Detroit and 39 per cent in the rural area had good diets, whereas the proportions with good diets of those who qualified for the program but did not take part in it remained at 28 per cent in each area.

American diets are most likely to lack calcium, ascorbic acid, thiamine and vitamin A. In Detroit the diets of the participating families contained 16 to 18 per cent more of those nutrients than did those of the non-participating eligible families. In the rural area the differences were from six to 18 per cent.

Agriculture.—Although the evaluated first phase of the pilot Food Stamp Program was on too small a scale to have a measurable impact on United States agriculture, its results indicate that it has some potential value with respect to increasing sales of agricultural products. The proportion of the total population in the pilot areas who took part in the Food Stamp Program from July to November, 1961 was about six per cent. Since those areas were severely depressed economically the proportion of the total United States population which would be affected by a program expanded to cover all such depressed areas would be less than six per cent under present conditions. However, a point in favor of the Food Stamp Program is that it is countercyclical. The number of people participating in the program and the volume of agricultural products sold through it would expand in periods of severe depression and contract in more buoyant times when demand for food through other channels would be stronger and the need of agriculture for assistance less.

The feature of the program which ensures increased consumption is the obligation of the participating families to purchase coupons of value equal to that of the food normally purchased by families of similar size and income. The increases measured in the surveys in food sales (eight per cent) and in value of food consumed by the participants (34 per cent in Detroit and nine per cent in the rural area) are evidence that more agricultural products were indeed consumed. Comparisons of increased expenditures on food by the Food Stamp Program recipients and the value of the free coupons showed that almost all the subsidy in Detroit and more than 80 per cent of it in the rural area had been used for food.

More than 80 per cent of the increased value of food consumed by the participants in both areas was for meat, poultry, milk products, fruit and vegetables. The production of those foods, particularly those of animal origin, from which was derived about 60 per cent of the increase in value of food consumed in Detroit, uses more agricultural resources, capital, labor, knowledge and skill, than does the production of "basic" crops such as cereals. Increased demand for the above foods thus contributes to the employment of farmers' resources and to their income.

Another advantage of the program to agriculture has been the increased demand for the perishable foods, milk, fresh fruit and vegetables for which almost immediate sale is necessary to avoid loss. In addition, the two latter groups are foods which have received little price support from the United States government.

The Food Stamp Program participants increased their consumption mostly of those foods which were of high protein, mineral and vitamin content, the kinds needed by a well-fed population. A shift to the production of more of such desirable products is thus encouraged by Food Stamp Program demands.

In the short run, if the supply of a product is limited the effect of the Food Stamp Program will be to raise its price to farmers. The Food Stamp Program participants will take a greater share of the product than formerly and, since the price elasticity of demand for food is generally low among medium and high income groups, those groups will be willing to pay more. That will, of course, decrease the benefits of the Food Stamp Program to its participants. The producer should get all of the increase in price, as there is no justification for marketing costs to rise when the quantity marketed has not increased. However, studies of the United States Department of Agriculture showed (in 1936) that a rise in the retail price of food induced a percentage rise in marketing charges of about one-third of the percentage increase in retail price.

If there is a surplus of a commodity the increased consumption by Food Stamp Program families may make it worthwhile to put the surplus on the market. The farmer would then receive for the surplus sold only the difference between the retail price and the regular marketing charges. The price would probably remain low enough for the Food Stamp Program recipients to obtain large benefits.

In the long run, a large subsidy through the Food Stamp Program should increase total consumer demand. If production is unregulated the increased demand will encourage increased production and a consequent decline in prices will occur. If production is adjusted, the first effect of higher prices might be maintained even with larger production.

Future.—The satisfactory results obtained in the first eight pilot areas prompted many more requests for the implementation of the program elsewhere than could immediately be filled. As already noted some expansion was authorized in 1962 to test the program under broader conditions, and in January, 1963, President Kennedy recommended that legislation be enacted so that the program could expand into all areas where conditions warranted its establishment. Legislation to put the program on a continuing basis was subsequently introduced in the United States Congress.

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CHANGES IN THE DAIRY INDUSTRY OF THE FRASER VALLEY, B.C., 1954 to 1961

D. C. CROSSFIELD

A review of the findings from two dairy farm management studies in the Fraser Valley of British Columbia draws attention to some significant changes in the dairy industry in the Valley. These changes may be summarized as follows:

Investment.—The most notable change occurred in land values. Investment in land increased from an average value of $17,224 per farm on 65 farms in 1954, to $25,533 on 92 farms in 1961, an increase of 48 per cent. Buildings, equipment and livestock increased in value by eight, ten and 15 per cent respectively (Table 1). The most striking fact here is that acreage increased very little (Table 2), while the average value per acre increased from $304 to $496. Buildings, equipment and livestock also increased in size, volume or numbers. Land speculation, the result of urban development, has no doubt been a contributing factor in this large increase in land value. The increased values of equipment are largely due to the installation of high cost bulk tank units and milking parlors and, to a lesser extent, barn-cleaning equipment. Livestock recorded a moderate increase in numbers and average value, and a very definite trend from the small to the large type of dairy breed (Table 2). Total farm investment increased 23 per cent, from an average of $43,077 per farm to one of $52,983 per farm.

Table 1.—Changes in the Dairy Industry of British Columbia, 1954 to 1961

Number of farms	1954	1961	Per cent increase or decrease
	65	92	
	— dollars —		
Investment:			
Land	17,224	25,533	+48
Buildings	10,089	10,873	+ 8
Equipment	6,103	6,703	+10
Livestock	8,240	9,493	+15
Other	1,421	381	—
Total investment	**43,077**	**52,983**	**+23**
Receipts:			
Current	11,045	13,129	+19
Capital	517	394	—
Inventory increase	2,421	2,826	+17
Total receipts	13,983	16,349	+17
Expenses:			
Current	6,502	8,549	+31
Capital	1,875	2,887	+54
Inventory decrease	1,573	238	—
Total expenses	**9,950**	**11,674**	**+17**
Family Farm Income	4,033	4,675	+16
Value of unpaid family labor	631	693	+10
Investment at 5 per cent	2,154	2,649	+23
Operator's labor income	1,248	1,333	+ 7
Value of perquisites	728	619	−15
Operator's labor earnings	1,976	1,952	− 1

Receipts and Expenses.—Current receipts were 19 per cent higher but current expenses increased by 31 per cent. The increase in current receipts was attributed to the increase in milk production per cow and not to any increase in unit price received for milk (Table 2). Increases in current expenses were due mainly to higher feed, livestock and operating equipment costs and to a lesser extent additional labor, real estate and custom work expenses.

Capital expenses or new investments increased by 54 per cent, reflecting a decided improvement in the availability of capital for further investment. The net increase in inventory per farm rose from $848 in 1954 to $2,588 in 1961.

Table 2.—Changes in Selected Factors Concerning the Dairy Industry of the Fraser Valley, B.C. 1954 to 1961

Factor	Unit	1954	1961	Change
		No. of farms		
		65	92	
Land use:				
Improved acres	acres	61.8	63.7	+ 1.9
Unimproved acres	"	5.9	20.2	+ 14.3
Total acres	"	67.7	83.9	+ 16.2
Average value per acre of improved land	$	304	496	+ 192
Hay yields per acre (mixed)	tons	2.2	2.17	− 0.03
Grass silage yields per acre	"	6.2	6.6	+ 0.4
Use of commercial fertilizer (all types)				
Pounds per acre applied on hay and pasture	pounds	205	204	—
Tons of fertilizer per farm	tons	3.67	2.73	− 0.94
Cost per ton fertilizer	$	73	90	+ 17
Annual cost of owning and operating equipment	$	1,682	1,906	+ 224
Average number grade cows		20.4	23.8	+ 3.4
Average number pure bred cows		5.6	4.3	− 1.3
Average value of dairy cows	$	223	250	+ 27
Production per cow	pounds	7,650	9,507	+1,857
Price received per 100 pounds milk sold	$	4.37	4.30	− 0.07
Per man-equivalent (labor)	m.e.	1.75	1.69	− 0.06
Pasture acreage	acres	25.7	23.1	− 2.6
Cow equivalent per acre pasture	c.e.	1.3	1.5	+ 0.2
Feed requirements				
		tons per cow equivalent		
Hay		1.80	1.89	+ 0.09
Silage		2.76	3.20	+ 0.44
Roots, fodder, etc		0.35	0.74	+ 0.39
		tons per cow		
Dairy feed		0.94	1.32	+ 0.38
Other grains and concentrates		0.28	0.10	− 0.18
Total concentrates		1.22	1.42	+ 0.2
Livestocks breeds in herds	per cent			
Holstein and predominantly Holstein	"	39	70	+ 31
Guernsey and predominantly Guernsey	"	33	12	− 21
Jersey and predominantly Jersey	"	22	5	− 17
Mixed breeds	"	2	10	+ 8
Ayshire and predominantly Ayrshire	"	4	3	− 1

Total receipts increased by 17 per cent, as did total expenses. An increase of 16 per cent was realized in family farm income but the added increases in charges to return on investment and unpaid family labor reduced the gain in operator's labor income to seven per cent. Undoubtedly the added inputs going into the operation, with the resulting increase in changes to return on investments, have not increased the operator's labor income sufficiently to warrant this added investment.

The Land.—The utilization of the improved acreage increased by about two acres. Average yields of hay and silage remained practically the same from one period to the next as did the per acre application of fertilizer (commercial), which was 205 pounds and 204 pounds for each period respectively, on hay and pasture fields. Tons of commercial fertilizer applied per farm declined from 3.67 tons to 2.73 tons or a 26 per cent drop and the cost per ton rose from $73 to $90 per ton (Table 2).

Table 3 describes the increase in the use of mechanical or labor-saving types of equipment. Bulk tanks, barn cleaners, pipe-line milkers and augers and blowers were practically non-existent in 1954 but the use of this type of equipment has since become quite extensive. Only eight per cent of the farms in 1954 but over 50 per cent in 1961 had forage harvesters and clippers; the corresponding figures for balers were 12 and 30 per cent respectively. The use of irrigation equipment has declined, probably because of the favorable weather, in the last few years, during that season when irrigation is usually necessary and helpful. The pattern of use of tractors, trucks and automobiles was about the same in both years.

Equipment.—The annual cost of owning and operating equipment increased from $1,682 to $1,906, a 13 per cent increase per farm. The rise in cost here is due mainly to large increases in the use of power-driven equipment such as balers, forage choppers, augers and blowers (Table 3).

Dairy Cattle.—Production per cow increased by 1,857 pounds. Since the increase in the number of cows milked per farm is not significant there must have been an improvement in the quality of cows and/or a change-over from the smaller to the larger type of dairy cow. There was a noted change in breeds (Table 2). In 1954 the Holstein or predominantly Holstein herds accounted for 39 per cent of all cows milked whereas in 1961 they accounted for 70 per cent. The smaller type breeds of predominantly Jersey and Guernsey herds accounted for 22 per cent and 33 per cent of the total in 1954 but dropped to five per cent and 12 per cent in 1961.

The average price per 100 pounds of milk sold decreased only, from $4.37 to $4.30.

Table 3.—Changes in the Use of Equipment on Dairy Farms in the Fraser Valley, B.C., 1954 to 1961

Type	1954[a]	Per cent[b]	1961[a]	Per cent[b]
Bulk tanks	—	—	30	33
Barn cleaners	—	—	3	3
Forage harvesters, clippers and choppers	5	8	48	52
Pipe line milkers	—	—	6	7
Irrigation equipment	31	48	10	11
Manure spreaders	56	86	77	84
Augers and blowers	—	—	18	20
Balers	8	12	28	30
Cars	55	85	66	72
Trucks	27	42	51	55
Tractors	64	98	87	95

[a] Number of farms having equipment not number of pieces of equipment.
[b] Per cent of total number of farms.

Labor.—Labor requirements were relatively the same about in 1954 as in 1961, from one period to recording only a slight decrease of 0.06 man-equivalents.

Feed.—Feed requirements per cow-equivalent an increase of 0.09 tons for hay, 0.44 tons for silage and 0.39 tons for roots and other fodder; 0.2 more tons of dairy feeds and other concentrates were also required. The swing to the Holstein breed has no doubt accounted for this increase in feed requirements. The use of permanent pasture leys or grass leys used exclusively for pasture declined from 25.7 acres to 23.1 acres per farm.

Summary.—Land values have increased and consequently the charge to return on investment has increased but the increase in operator's labor income has not been enough to warrant this large increase in land investment. A substantial increase in capital expansion or capital expense has occurred. Total receipts and expenses increased at the same rate.

Land use patterns remained about the same as did average yields per acre of hay and silage. The average rate of application of commercial fertilizer per acre remained the same but there was a decrease in the average total acreage fertilized per farm. Cost of fertilizer per ton increased.

Operating costs for equipment increased due to the increase in the use of power-driven equipment and the growing demand for more mechanical equipment is still most evident. However, labor requirements were the same in 1961 as in 1954.

Average milk production per cow increased by 1,857 pounds. Dairy breeds changed from a fairly even distribution of small and large-type animals to a predominately large type of dairy animal. Prices received per 100 pounds of milk sold remained practically the same.

Feed requirements for the dairy herd rose for both roughage and dairy mix and other concentrates per cow-equivalent. There was a slight decline in the use of pasture per farm.

SOME FACTORS AFFECTING INCOMES OF DAIRY FARMERS ON VANCOUVER ISLAND, B.C.

M. M. SORBOE

Dairying is of primary importance to the agricultural economy of Vancouver Island. The income from agriculture approximates ten million dollars annually, about one-half of which is derived from the dairy and poultry enterprises.[1]

The local markets are large enough to handle the present supply and it appears that milk production on the Island could be expanded somewhat without creating an oversupply. The sale of milk in this area has increased continuously from about 10.9 million quarts in 1949 to 18.2 million quarts in 1961.[2]

To determine some of the factors affecting incomes of dairy farmers we have divided a sample of 48 farms into three groups of 16 farms each, according to labor income. The averages derived from these groups form the basis of the following analysis.

The high and low income farms have been used almost exclusively for this purpose because of their similarity in size. The number of cows milked, the number of acres under cultivation and the total amount of capital invested per farm were nearly the same. In addition, the differences in the use of production factors and in their influence on incomes became more apparent when farm averages, at the two opposite ends of the labor income array, were compared.

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[1] Day, J. H., L. Faarstad and D. G. Laird. Soil Survey of Southeast Vancouver Island and the Gulf Islands, B.C., Canada Department of Agriculture Report No. 6, 1959, p. 10.

[2] Province of B. C., Milk Board, Annual Report for year ending December 31, 1961.

Farm Capital.—A large capital investment is required for dairy farming in British Columbia. This is equally true of Vancouver Island. Although land on the Island is less costly, its productive capacity per acre is not as great as that of the land on the lower mainland of the Fraser Valley; a larger acreage per cow is therefore required.

The average investment per farm, in 1961, was $59,973 and $61,697 for the high and the low income farms respectively. The much lower investment on medium income farms was largely due to the size of operation (Table 1).

The most significant differences in the allocation of total investment to the main physical assets occurred between the high and low income groups. Whereas the high income farms had 65 per cent of total capital invested in real estate and 19 per cent in dairy cattle, the low income farms had 69 per cent invested in real estate and only 16 per cent in dairy cattle. An investment in equipment, one per cent higher on high income farms, was entirely due to more capital being invested in dairy equipment on the high than on the low income farms.

Land Use.—High and low income farms had nearly the same acreage of improved land per cow milked, 2.6 acres and 2.7 acres per cow respectively, but there was a marked difference in the unimproved acreage on a "per cow" basis. The high income farms had an average of 2.2 acres compared with 3.5 acres of unimproved land per cow for the low income group (Table 2). A distribution of the farms by districts indicated that this was partly due to the fact that more of the farms in the low group were located in the less concentrated northerly areas where unimproved land was relatively more abundant.

Table 1.—Distribution of Farm Capital, 48 Dairy Farms, Vancouver Island, B.C. 1961

	Operator's labor income			
	High	Medium	Low	All farms
Number of cows in herd	31.6	23.8	29.0	28.1
Total capital investment per cow	$ 1,900	$ 1,871	$ 2,127	$ 1,970
	— dollars per farm —			
Land	27,292	18,418	28,778	24,829
Buildings	12,009	10,546	13,606	12,054
Total real estate	**39,301**	**28,964**	**42,384**	**36,883**
Equipment—Dairy	1,234	897	801	977
—General	3,790	3,102	4,013	3,635
—Power	3,768	3,052	4,361	3,727
Total equipment	8,792	7,051	9,175	8,339
Livestock—Dairy	11,324	8,188	9,777	9,763
—Other[a]	225	52	43	107
Total livestock	11,549	8,240	9,820	9,870
All other inventory	331	367	318	339
Total capital	**59,973**	**44,622**	**61,697**	**55,431**

[a] Includes livestock other than dairy.

Table 2.—Average Acreage and Land Use, 48 Dairy Farms, Vancouver Island, B.C. 1961

	Operator's labor income			
	High	Medium	Low	All farms
Number of cows in herd	31.6	23.8	29.0	28.1
	— acres per farm —			
Acres operated: improved	8.18	59.6	78.6	73.3
Acres operated: unimproved	69.7	74.6	101.8	82.1
Total acres operated	151.5	134.2	180.4	155.4
Acres in hay and silage	50.8	40.1	42.6	44.5
Acres permanent pasture	19.8	15.9	31.8	22.5
Acres in grain	3.1	1.3	0.2	1.5
Acres of potato and other roots	3.6	0.6	0.7	1.7
Acres of other improved land[a]	4.5	1.7	3.3	3.1

[a] Includes summerfallow, farmstead and idle land.

A heavier application of fertilizer and lime was associated with a greater yield of hay and silage per acre for the high income group (Table 3). The yields of hay and silage (silage was converted to hay equivalents on a basis of three tons of silage to one ton of hay) was 2.34 tons and 2.25 tons of hay equivalents per acre for the high and low income farms, respectively.

The high income farms as compared with the low income operators, utilized a larger proportion of the improved acreage for the production of hay and silage and placed greater emphasis on the production of hay rather than silage. This difference in production patterns was reflected in the amount of hay purchased which was only 15.2 tons per farm for the high income group in contrast to 34.8 tons of hay per farm for the low income group.

Table 3.—Use of Commercial Fertilizer and Lime on Hay and Pasture Land, 48 Dairy Farms, Vancouver Island, B.C. 1961

	Operator's labor income			
	High	Medium	Low	All farms
Commercial fertilizer:				
Pounds applied per acre	265	278	224	255
Per cent available nitrogen	18	17	24	19
Per cent available phosphorus	13	13	11	12
Per cent available potash	7	11	5	8
Per cent of total acres fertilized[a]	62	58	48	56
Cost per ton (dollars)	89	84	88	87
Lime (including marl)				
Pounds applied per acre	6,505	6,667	3,684	5,545
Per cent of total acres limed[a]	9	1	5	5
Cost per ton (dollars)	3	3	4	4

[a] Total acres includes acres in hay and silage and pasture.

Superior land management practices followed by the high income operators probably limited the seriousness of their pasture deficiency problem. These practices included stricter adherence to rotational grazing, pasture clipping and the prevention of overgrazing in the fall months of the year. This enabled the high income group to carry 2.5 cow equivalents per acre of pasture compared with only 1.2 cow equivalents per acre of pasture on the low income farms.

Labor.—The average amount and value of labor was nearly the same for the high and low income groups. The composition of labor, however, was different; the high income farms had more hired and less family labor than the other group. Somewhat more efficient use of labor was indicated by a calculation of work units per man equivalent. The high income farms had 284.6 productive man work units per man equivalent compared 275 for the low income group.

Business Summary.—The most noticeable difference in the financial summary statement was reflected in the value of milk sales per farm. Milk sales totaled $15,171 and $11,621 (89 per cent of current receipts) for the high and low income farms, respectively (Table 4). The difference in milk receipts was mainly a result of a greater volume of milk sold per cow because the number of cows per farm and the receipts per hundredweight of milk were nearly the same (Table 5).

Table 4.—Average Operating Statement—48 Dairy Farms Vancouver Island, B.C. 1961

	Operator's labor income			
	High	Medium	Low	All farms
	— dollars per farm —			
Milk sales	15,171	10,282	11,621	12,358
Livestock sales	1,049	636	981	888
Crop sales	334	80	115	177
Miscellaneous	476	57	294	276
Current receipts	17,030	11,055	13,011	13,699
Capital receipts	482	314	252	349
Inventory increase	3,376	2,990	3,727	3,364
Total receipts	**20,888**	**14,359**	**16,990**	**17,412**
Feed purchases	4,808	3,860	4,768	4,479
Other livestock expense	903	891	1,313	1,035
Equipment operating expenses	1,247	911	1,281	1,146
Crop expense	813	499	613	642
Hired labor	1,936	663	1,313	1,304
Other expense	1,228	971	1,187	1,129
Current expense	10,935	7,795	10,475	9,735
Capital expense	3,701	3,348	4,127	3,725
Inventory decrease	73	53	303	143
Total expense	**14,709**	**11,196**	**14,905**	**13,603**
Family farm income	6,179	3,164	2,085	3,809
Interest on investment	2,999	2,231	3,085	2,772
Value of unpaid labor	413	449	881	581
Operator's labor income	2,767	484	−1,881	456
Value of perquisites	590	557	625	591
Operator's labor earnings	3,357	1,041	−1,256	1,047
Nonfarm income	378	860	1,185	808

Table 5.—Milk Production and Cost of Milk Produced for Sale, 48 Dairy Farms Vancouver Island, 1961

	Operator's labor income			
	High	Medium	Low	All farms
	— pounds —			
Total pounds of milk sold	301,002	212,605	235,615	249,741
Pounds quota milk sold	255,649	184,650	200,404	213,568
Pounds of milk sold per cow	9,537	8,917	8,125	8,876
Adjusted pounds milk sold per cow[a]	9,545	8,472	7,990	8,695
	— dollars per cwt. —			
Receipts per 100 lbs. of milk sold	5.04	4.84	4.93	4.95
Labor income per 100 lbs. of milk sold	0.91	0.23	−0.80	0.18
Cost of production per 100 lbs. of milk sold	4.13	4.61	5.73	4.77

[a] Morrison F.B. Feeds and Feeding 21st edition, The Morrison Publishing Co., Ithaca, N.Y. 1951. p. 653.

Feed costs, representing about 45 per cent of current expenses averaged $145 per cow for the high and $162 per cow for the low income farms.[1] The digestible nutrient content of the total feeds used, however, was the same per cow milked on the high and low income farms.[2]

Conclusion.—From the foregoing analysis we may conclude that some of the factors associated with higher incomes to dairy farmers on Vancouver Island were:

1. A better allocation of capital between the main physical assets included in total investment.

2. A larger proportion of total land under cultivation and superior land use techniques. This helped to provide a larger amount of the winter feed from the farm without undue sacrifice of pasture requirements.

3. Greater knowledge and skill in the purchase of dairy feeds and in the feeding of dairy cattle.

4. Higher production of milk per cow.

A larger quantity of milk per pound of "total digestible nutrients" (T.D.N.) of feed used was obtained by the high income group. Since feed for dairy cows was one of the major items of expense, the production of more milk per pound of T.D.N. resulted in a larger income without any increase in cost.

Additional factors which contributed to larger incomes for the high group, to a lesser degree, were: a slightly more efficient use of labor, lower equipment costs per acre of cultivated land and lower dairy building costs per cow milked.

PUBLICATION

Dairy Farm Business Analysis, Western N.S.—Year 1962. Grant, Walter V. and Jean Lelacheur. Farm Management Division, Extension Service Branch, Nova Scotia Department of Agriculture and Marketing, Truro, N.S. July 1963. pp. 5.

A business report on 58 dairy farms participating in the N.S. Farm Management Extension Program.

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[1] The feed costs of medium income farms equalled 49.5 per cent of current expenses.

[2] The digestible nutrients were calculated from standards developed by Morrison F. B. Feeds and Feeding.

THE ECONOMIC ANNALIST

A BIMONTHLY REVIEW OF AGRICULTURAL BUSINESS

ECONOMICS DIVISION

M. E. ANDAL, Acting Director

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G. P. BOUCHER, Editor

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INDEXES OF WHOLESALE PRICES, FARM PRICES AND LIVING COSTS

Year and Month	General Wholesale Prices	Wholesale Prices of Canadian Farm Products			Farm Prices of Agricultural Products	Prices of Commodities and Services used by Farmers		Consumer Prices		Industrial Production
		Total	Field	Animal		Composite[a]	Equipment and Materials	Total	Food	
	1935-39=100							1949=100		
1926	130.3	144.4	158.5	130.2	....	130.6	119.9	75.9	66.6	....
1927	127.3	138.6	149.4	127.8	....	131.2	119.9	74.6	65.3	....
1928	125.6	136.3	134.3	138.2	....	129.3	118.3	75.0	65.6	....
1929	124.6	140.8	137.2	144.4	....	127.9	117.6	75.8	67.1	....
1930	112.9	119.5	105.8	133.3	....	117.0	105.6	75.3	65.6	....
1931	94.0	78.9	65.0	92.7	....	100.9	92.2	67.9	51.4	....
1932	86.9	65.5	60.4	70.5	....	93.3	89.3	61.7	42.8	....
1933	87.4	69.3	69.3	69.2	....	89.8	88.8	58.8	42.3	....
1934	93.4	83.5	80.5	86.5	....	95.5	96.8	59.6	46.2	....
1935	94.4	89.2	84.4	94.1	88.0	95.4	95.6	59.9	47.2	41.4
1936	96.8	97.9	102.2	93.7	96.9	98.1	98.7	61.1	48.8	45.7
1937	107.7	117.4	128.9	106.0	119.7	105.3	108.4	63.0	51.4	52.3
1938	102.0	102.9	100.9	104.8	105.0	101.7	101.2	63.7	51.7	49.6
1939	99.2	92.6	83.7	101.5	91.8	99.3	95.7	63.2	50.2	53.3
1940	108.0	96.1	85.4	106.7	96.8	106.8	101.8	65.7	52.6	63.9
1941	116.4	106.6	88.9	124.4	110.2	116.1	107.8	69.6	57.9	80.1
1942	123.0	127.1	109.7	144.6	133.1	131.6	119.2	72.9	63.4	94.7
1943	127.9	145.4	129.0	161.8	157.8	143.4	122.4	74.2	65.2	100.5
1944	130.6	155.3	144.5	166.1	172.4	148.0	126.0	74.6	65.5	101.3
1945	132.1	166.4	162.5	170.2	185.7	152.1	125.9	75.0	66.3	90.1
1946	138.9	179.5	177.9	181.2	204.1	157.0	128.0	77.5	70.0	83.8
1947	163.3	192.2	184.1	200.2	215.8	170.4	139.5	84.8	79.5	91.5
1948	193.4	232.1	200.6	263.7	255.8	197.6	173.1	97.0	97.5	96.4
1949	198.3	228.7	191.9	265.4	255.4	204.1	180.3	100.0	100.0	100.0
1950	211.2	236.7	191.9	281.4	260.8	210.4	189.9	102.9	102.6	106.9
1951	240.2	268.6	200.4	336.9	296.8	230.0	206.0	113.7	117.0	116.6
1952	226.0	250.2	223.0	277.5	274.4	243.1	215.8	116.5	116.8	120.9
1953	220.7	221.6	179.4	263.8	250.4	239.8	207.4	115.5	112.6	129.1
1954	217.0	213.6	170.9	256.2	236.8	237.2	203.3	116.2	112.2	128.5
1955	218.9	212.6	180.1	245.1	232.7	238.3	204.6	116.4	112.1	142.3
1956	225.6	214.2	181.6	246.9	234.6	247.6	208.8	118.1	113.4	154.9
1957	227.4	213.6	169.2	258.0	234.2	255.9	211.3	121.9	118.6	155.4
1958	227.8	222.9	171.4	274.5	245.5	259.9	213.0	125.1	122.1	153.0
1959	230.6	223.9	176.1	271.6	247.4	269.5	219.1	126.5	121.1	165.4
1960	230.9	226.6	189.1	264.1	250.0	276.7	222.7	128.0	122.2	167.6
1961	233.3	230.9	191.7	270.0	261.2	282.2	226.7	129.2	124.0	173.1
1962	240.0	235.6	185.1	286.0	264.0	290.8	235.1	130.7	126.2	186.1
1962										
Jan.	237.0	233.3	195.6	271.0	266.7	283.4	233.6	129.7	124.8	179.1
Feb.	237.1	233.6	196.4	270.8	265.7	....	....	129.8	125.0	181.4
Mar.	237.0	231.7	196.0	267.5	265.7	....	....	129.7	124.4	183.9
April	237.4	233.7	195.4	272.0	266.1	293.1	235.8	130.3	125.8	184.0
May	239.3	237.1	197.7	276.5	267.9	....	....	130.1	124.5	186.1
June	240.3	243.3	200.7	285.8	272.8	....	....	130.5	125.6	186.3
July	241.3	249.6	203.7	295.6	277.8	....	....	131.0	127.0	186.7
August	242.6	238.0	171.6	304.3	262.9	295.8	236.0	131.4	128.4	188.7
Sept.	241.9	231.8	165.8	297.8	257.8	....	....	131.0	126.8	188.8
Oct.	241.7	232.1	165.9	298.2	255.7	....	....	131.5	127.2	189.1
Nov.	242.2	232.7	165.1	300.3	254.7	....	....	131.9	127.7	189.6
Dec.	242.2	230.0	167.2	292.8	253.8	....	....	131.9	127.8	189.7
1963										
Jan.	242.9	227.0	170.7	283.3	251.1	290.8	237.6	132.0	129.0	189.4
Feb.	242.7	224.1	174.3	273.8	249.9	....	....	132.1	129.4	191.1
Mar.	242.4	222.1	175.4	268.8	247.2	....	....	132.1	128.9	194.0
April	242.8	219.0	171.4	266.6	243.4	298.8	238.3	132.3	128.9	194.3
May	244.4	221.9	171.9	271.9	244.6	....	....	132.3	128.3	195.7
June	245.8	227.5	174.9	280.1	250.1	....	....	132.8	129.7	195.9
July	246.2	229.7	173.4	286.1	253.2	....	....	133.5	132.5	192.8
August	244.7	227.6	169.6	285.6	252.2	299.7	237.0	133.9	133.2	195.1
Sept.	245.2	224.5	163.9	285.0	252.0	....	....	133.4	131.3	197.9
Oct.	245.9	216.7	163.3	270.1	247.7	....	....	133.6	130.4	....
Nov.	247.0	216.5	163.1	269.8	245.2	....	....	134.0	130.8	....
Dec.	245.7	....	....	....	....	....	....	134.2	131.4	....

Note:—See earlier editions for index numbers previous to 1926.

Source:—Dominion Bureau of Statistics, Ottawa.

(a) Exclusive of living component. 1963 indexes are subject to revision, since tax and interest rate figures are preliminary.

THE ECONOMIC SITUATION

External Trade.—Canada's total commodity exports rose to $640 million in October 1963 from $618.2 million in October 1962. Imports rose $622.7 million from $568.7 million. The export balance on merchandise trade declined to $17.3 million from $49.5 million.

January-October exports rose to $5.6 billion in 1963 from $5.2 billion in 1962; imports rose to $5.4 billion from $5.3 billion. The over-all export balance on commodity trade totaled $249.6 million, in contrast with an import balance of $25.4 million in January-October 1962.

Consumer Prices.—Canada's consumer price index (1949 = 100) rose to 134.0 in November from 133.6 in October 1963 and 131.9 in November 1962.

The food index rose to 130.8 in November from 130.4 in October. Prices were sharply higher for sugar and fresh tomatoes. Foods with moderate price increases included milk and cheese, bread and other cereal products, soft drinks, pickles, most fats, oranges and grapes, cabbage, celery and lettuce, most canned vegetables, liver and turkey. Generally lower prices were recorded for ice cream, eggs, grapefruit, bananas and apples, onions, carrots, and most cuts of meat.

Wholesale Prices.—Canada's general wholesale index (1935-39 = 100) rose to 245.9 in October from 245.2 in September 1963 and 241.7 in October 1962. The vegetable products group index rose to 233.2 in October from 223.2 in September, chiefly because of higher prices for grains, and sugar and its products. The animal products group index dropped to 252.7 from 261.8 largely because of lower prices for livestock, and fresh and cured meats. Lower prices for fertilizers brought the chemical products group index down to 188.2 from 189.5.

Farm Prices.—Canada's index of farm prices of agricultural products (1935-39 = 100) declined to 247.5 in October from 252.0 in September 1963 and 255.9 in October 1962. The decline from September to October 1963 was largely attributable to lower prices for livestock and potatoes.

Milk.—Estimated milk production declined to 1,638 million pounds in October 1963 from 1,645.7 million pounds in October 1962. The January-October total declined to 16,747 million pounds in 1963 from 16,760.7 million pounds in 1962.

Sales of fluid milk and cream, in milk equivalent, totaled 491.7 million pounds in September 1963, one per cent more than in September 1962. Sales in the January-September period increased by two per cent from 1962 to 1963, to 4,523.5 million pounds.

Economic Prospects for Canadian Agriculture[1]

Farm Income.—New production records were set in 1963. The volume of aggregate farm output was about eight per cent above the previous record of 1962. Most of this gain can be attributed to the bumper wheat crop but larger crops of other grains were harvested while dairy production was maintained. An increase in beef output offset a decrease in pork production. Cash income from farming operations in 1963 will set a new record total of an estimated $3.2 billion. Farm operating expenses and depreciation charges were also up in 1963, reaching $2.2 billion. However, higher expenses were more than offset by the substantial gain in inventories of grains and livestock on farms and the higher cash income. Thus, total farm net income for 1963 is estimated at $1.7

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[1] From a report presented at the Agricultural Federal-Provincial Conference held in Ottawa, December 16-17, 1963.

billion compared with $1.6 billion in 1962 but since a relatively large proportion of this gain is represented by larger inventories of grains and livestock on farms, realized net income in 1963 is estimated at $1.4 billion, essentially the same as in 1962.

Total cash income from farming operations in 1964 is expected to rise well above the record level of 1963, largely as a result of the movement of the huge 1963 wheat crop into export markets. The cash flow from these grain sales will continue to be felt well into 1965. Heavier marketings of cattle in 1964 will likely be partly offset by weaker prices and therefore total income from cattle sales may not be significantly larger than in 1963. Although total marketings of hogs are likely to exceed those of 1963, any increase in total returns will be partly offset by anticipated lower average prices. Gross farm income from dairying is not expected to vary significantly in 1964 from 1963.

The large anticipated gain in total cash income in 1964, due to the sale of the 1963 wheat crop, will more than offset the expected increase in farm operating expenses and thus realized net income in 1964 should exceed that of 1963.

Dairy Products.—Total milk production in 1963 is estimated at 19.3 billion pounds, virtually unchanged from the output of the previous year. It is probable that milk output in 1964 may be slightly less than in 1963. A larger population is expected to consume about 100 million pounds more fluid milk products in 1964 than in 1963.

Creamery butter production in 1963 is estimated at 350 million pounds, down three per cent from a year ago. Butter consumption in 1963 increased to an all-time record of 343 million pounds. This consumption, coupled with exports, will exceed production of creamery butter and stocks will be reduced. Butter production in 1964 is forecast at 340 million pounds, which is about equal to the present level of consumption.

Thirty million pounds of cheddar cheese are expected to move into export markets during 1964 and about 105 million pounds will be sold in the domestic market, thus resuming the upward trend of domestic use in recent years.

Livestock.—Hog marketings in the first quarter of 1964 should average about 140,000 head per week, 11 per cent more than in the same quarter of 1963. Marketings during the April to September period of 1964 are expected to be up significantly from the same period in 1963.

Hog prices will be weaker during the first half of 1964 compared with the same period a year ago. Grade A hogs in Toronto in the week ending December 5 averaged $26.95 per cwt. There may not be much recovery before the summer of 1964.

More cattle went on feed in Canada in the latter part of 1963 than during the same period of 1962. Prices for fed cattle in Canada during the first six months of 1964 are expected to show little change from December levels.

Veal calf marketings in Eastern Canada in 1963 have been slightly below last year's marketings and this downward trend is expected to continue in 1964. There is not likely to be much change in prices from those of 1963.

Sheep numbers are expected to decline slightly from previous levels in 1964. Consequently, the 1964 wool clip should be less than last year's.

Eggs and Poultry.—Egg production during the early months of 1964 is expected to be less than in the corresponding period of 1963. Prices in the first four or five months are likely to be equal to or slightly higher than those which prevailed in 1963. If the trend to higher layer replacements which started last June continues, egg production may rise above year earlier levels by May or June with a consequent weakening of prices.

The prospect is for another large crop of turkey and broiler chicken in 1964.

Canada's 1963 wheat crop was an all-time record size of 723 million bushels, three per cent above the previous record set in 1952. Exports may reach or exceed 550 million bushels (including flour) in 1963-64. This would be a new record, greatly exceeding the previous record set in 1928-29. Domestic use in 1963-64 is expected to be about 145 million bushels. However, wheat stocks carried over into 1964-65 will be only slightly lower than in the previous season and will total about 500 million bushels. This is about a year's normal requirements for exports and home consumption. Export prospects for the 1964-65 and 1965-66 crop years are favorable. Long-term contracts already signed with state trading countries, when combined with normal exports to traditional markets, suggest a level of trade of 375 to 400 million bushels each season. Exports of this volume, together with expected domestic use, would be sufficient to dispose of crops produced on 27 million acres if yields per seeded acre approximate the recent ten-year average.

Durum wheat supplies in Canada are exceptionally large and even though exports will likely increase in 1963-64 over those of the previous year, carry-over stocks will be at record levels. Prices, in response to these large supplies, are lower than a year ago and sharply below those of two seasons ago. The price spread between durum and bread wheats has narrowed and will likely remain so until durum supplies are reduced. Under these circumstances, a further reduction in seeded acreage of durum in 1964 would appear warranted.

Rye prices are expected to remain favorable for the remainder of the current season.

Feed Grains.—Domestic supplies of feed grains are 11 per cent larger this year compared with last year's. Oat supplies in 1963-64 of 603 million bushels are higher by five per cent. Domestic use will probably be about 400 million bushels and exports are expected to total some 25 million bushels. Given normal yields, about 40 bushels per acre, and an acreage similar to the 9.5 million acres seeded in 1963, then fully adequate supplies would be available in 1964-65, bearing in mind the expected large carryover of about 180 million bushels next July. Prices are expected to remain relatively stable for the balance of the 1963-64 crop year. Barley supplies (carry-over of 90 million bushels plus 1963 production of 220 million) were 310 million bushels compared with the low level of 224 million in 1962-63. This is still below the recent five-year average of 322 million bushels. Reflecting more adequate supplies, prices for the 1963-64 crop year will likely average lower than those of the previous year. On the basis of an estimated carry-over of 140 million bushels at July 31, 1964, and with average yields, a seeded acreage in 1964 similar to that planted in 1963 would provide fully adequate supplies for 1964-65. Imports of corn from the United States in 1963-64 will likely fall well below the high levels of the past two seasons. Prices to Canadian producers will likely average somewhat higher than in 1962-63. Millfeed supplies should be considerably larger this year due to the expansion in output of flour mills to meet export commitments. With the exception of some small areas, forage supplies are ample in all provinces this season.

Oilseeds.—Increased supplies of all Canadian oilseeds, except soybeans, are in prospect for 1963-64. Flaxseed supplies of 25.5 million bushels are 4.2 million greater than in 1962-63. Exports in 1964 should be about the same as a year ago. However, producers of flaxseed are confronted by a world market where the long-run trend in use appears to be either stable or downward. Prices of Canadian flaxseed in the latter part of 1963 have reflected the expanded supply conditions. It does not appear likely that flaxseed prices in 1963-64 will equal the average of those for 1962-63 and they may decline as the season advances.

Prospects are for a buoyant market for soybeans and prices to producers are likely to average even higher than the $2.50 per bushel in 1962-63. Soybean meal prices will probably not rise and may even decline in 1963-64.

Continued favorable prices for Canadian rapeseed are in prospect as the supply available to users is down considerably. Prices to producers for the 1963 crop have been equivalent to about five cents per pound compared with an average of about four cents realized on the 1962 crop.

The present emphasis in the U.S. on diverting acreage from grain production could lead to a rapid growth in production of sunflower seed, providing increased competition for Canadian exports. If this occurs, prices would be affected.

A further substantial increase in exports of Canadian mustard seed is in prospect. Since almost all of the crop is grown under contract, producer prices will be little affected by the sharp increase in production.

Fruits and Vegetables.—In 1963, a record crop of 22 million bushels of apples was harvested in Canada. Larger crops were also harvested in Europe but the United States crop is down by about three million bushels. It is expected that there will be a larger volume of exports from Canada to the United States but this increase may not be sufficient to offset the expected decline in shipments to European markets.

Prices to Canadian producers for apples are expected to be lower in 1963-64 than in the preceding crop year but because of the larger crop aggregate returns may be equal to or higher than those of 1962-63.

Consumption of processed fruits and vegetables is expected to continue to rise. The demand for frozen corn and peas, the two main frozen vegetables, appears to have levelled off after rising between 1959 and 1961. The canned pack of these products continues to climb. Production of frozen strawberries and raspberries continues upward while declining in the canned form. Exports of processed fruits and vegetables, particularly to Britain and Western Europe, are expected to increase.

Prospects are not encouraging for exports of table potatoes but seed potatoes remain in good demand for export sales. Prices to producers, which were depressed at the end of the harvesting season, have now strengthened.

Sugar Beets, Dry Peas, Dry Beans and Tobacco.—With the present strong sugar market, prices to Canadian producers for sugar beets are expected to be above average in the immediate future.

Production of dry beans in 1963 was slightly above the 1962 outturn but prices are expected to remain above negotiated levels. Export demand is expected to remain strong with prices good.

Prices for dry peas are expected to be lower in 1963-64 with the larger crop. There may be some increase in European demand for peas.

The quality of the 1963 flue-cured tobacco crop is generally good and returns to producers should average higher than the 48.3 cents per pound received for the previous crop. Flue-cured tobacco is now a designated commodity under the Agricultural Stabilization Act. Price support, on a deficiency payment basis, has been authorized for the 1963 crop to permit of an orderly transition from a minimum-grade price system to an open market system.

Seeds.—There are adequate seed supplies of wheat, oats, barley, oilseeds and hybrid corn to meet expected domestic needs in 1964. Substantial quantities of the preferred varieties of pedigreed wheat and oats are available for export. With the exception of alfalfa and double-cut red clover, domestic supplies of forage seeds are sufficient for Canadian needs. While retail prices of timothy seed will be substantially higher in the spring of 1964 than in 1963, total supplies should be sufficient.

OPTIMUM PROFITS ON EGGS FROM SMALL FLOCKS IN EASTERN ONTARIO

FRANK LAWRENCE

Egg production is becoming more and more specialized throughout Canada but most laying flocks are still small in size, although important as a source of supplementary cash farm income. Flocks of more than 1,000 layers are the exception while flocks of less than 100 layers predominate. However, flocks averaging about 300 layers and ranging in size from 100 to about 800 birds are the backbone of the egg industry: they produce more than half of the national output of eggs. In 1961, for example, poultry flocks in Ontario produced 179.2 million dozen eggs, valued at $69.7 million. This output was 42 per cent of the national production and 44 per cent of the national gross income from eggs.

Competitive Position of Small-scale Producers.—Small-scale poultry operations are usually carried on as a side-line, on farms, and closely integrated with the major farm enterprise. Small flock enterprises are comparatively "capital-poor" and "labor-rich". They depend mostly on the availability of unused farm resources for buildings, equipment and labor. Much of the work on small-size flocks is performed in conjunction with other operations and depends less than most other enterprises on hired services and costly labor-saving equipment.

Objective of Study.—The objective of our study was to determine the input-output relationships and the influence of selected variables on costs and returns in small-scale egg production on dairy farms in Eastern Ontario. The data obtained were used to show the adjustment potential and the resulting difference in returns that could be expected from improved practices.

Sample.—The required data were obtained from detailed records of a small group of individual farmers. The sample was selected from 100 dairy farms stratified by type and size and located within a 100-mile radius of Ottawa in the nine most easterly counties of Ontario.

Qualifying factors for the farms selected for this study were: (1) the provision of complete physical and income data for the calendar year 1961 as well as data on the fluctuation in flock strength; (2) the operation of flocks in the 100 to 1,000 layer range; and (3) production sold through registered grading station outlets for the greater part.

Only 15 farms met these qualifications, although dairy farms with flocks of 100 layers or more numbered 24: one flock exceeded the 1,000 layer limit, five others produced for urban and hatchery outlets; and necessary data were incomplete for three flocks.

The number of small flocks was about equally divided between flocks of light-breed and flocks of heavy-breed meat-strain birds. Light-breed flocks included various Leghorn strains such as Hy-Lines, Shaver and Light Sussex crosses; the heavy-breed flocks included meat crosses such as Rock × R.I., Barred Rock × N. Hampshire, Grey Rock × R.I. and White Rock hybrids.

Labor used and part of the capital costs are the only estimated data. These estimates were provided by the operator and his wife.

Egg Income.—In 1961, small-flock operators in this sample of 22-cow dairy farms netted an average income of about $406 from eggs to compensate for 441 hours of unpaid labor and the use of $1,082 worth of capital in the egg enterprise (Table 1). This income includes about $62 worth of under-grade eggs consumed in the farm household. In calculating net income provision was made for $56 per flock to defray the cost of maintenance, obsolescence of poultry housing and equipment, farm taxes and insurance on farm buildings.

Net income amounted to $1.39 per layer a year and represented a profit margin of about 22 cents per $1.00 of gross income from eggs. This is a much higher margin per layer than on specialized large-scale egg-production farms.

Table 1.—Organization, Production, Costs and Returns from 15 Poultry Flocks on Dairy Farms in Eastern Ontario, 1961

	Farm group averages		
	Eight light-breed flocks	Seven heavy-breed flocks	All 15 flocks
A. Size of dairy and egg enterprises:			
Milk cow numbers	23.5	20.5	22.0
Average number of layers	393.0	176.4	291.9
Number of pullets penned	330.6	246.1	291.2
B. Hours of labor used on hens: unpaid	551	315	441
hired	100	—	54
C. Capital invested in hens, building, and equipment	$1,377	$ 745	$1,082
D. Egg output: 1. per flock, dozen	6,974	3,266	5,244
2. per hen	213	222	216
E. Egg business summary:			
(a) Gross income from eggs	$2,467	$1,196	$1,876
(b) Basic costs:			
Feed and sundry cash	$1,529	$ 613	$1,101
Flock depreciation	433	104	280
Housing and equipment	69	41	56
Hired labor	57	—	31
(c) Net income (return to unpaid labor, management and capital)			
1. per flock	$ 379	$ 438	$ 406
2. per hen	0.96	2.48	1.39
(d) Deferred income from "deficiency payment" per flock	$14.90	$10.36	$12.78

Nevertheless, it fell short by about $59 per flock, on the average, of the optimum income attainable with a more rational program of feeding, and by about $172 per flock with improved feeding and flock replacement practices.

Gross income from eggs averaged $1,876 per flock. This is the equivalent of about $6.43 per hen a year as compared with an average of $6.27 for all flocks in Ontario in 1961. Gross returns from eggs averaged $35.27 per 100 dozen shipped to normal trade channels and $35.73 per 100 dozen to all outlets for eggs (Table 2). These figures compare with averages for the province of $33.10 per 100 dozen sold to egg-grading stations and $36.45 per 100 dozen from sales to all outlets. These return differentials are chiefly attributable to differences in seasonality of production and also, to some extent, to differences in egg grades.

The profit margin (return to capital and unpaid labor) on eggs produced on these farms in 1961 totaled $7.75 per 100 dozen eggs (Table 4). In providing for a fair return to capital, the margin for unpaid labor and management was the equivalent of 82.4 cents an hour, corresponding to a rate of $208 a month in egg production. This rate of return to labor is considered good since: (1) it more than covers the going local rate of 67 cents an hour for competent and dependable farm labor hired by the month; (2) more than half of the labor as well as management was spare-time work done by farm women; and (3) money earned on farm stretches half as much more in farm than in urban living[1].

Government "deficiency payments" of one cent per dozen on specified grades and volume of eggs for the September to December period of the 1961-1962 egg stabilization year came as a deferred cash income of about $13 per flock. This represents an additional net income of 4.4 cents a year per hen and 25 cents per 100 dozen eggs produced during the year. It also means a 2.9 cents boost per hour of annual total of unpaid labor on eggs; in effect the same as a wage increase of 2.3 per cent made retroactive to January 1, 1961.

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[1] Lawrence, Frank, A Look Into Farm Living Costs, The Economic Annalist, June 1960.

Flock Sizes and Income Differentials.—Laying flocks ranged from 100 to 765 hens and averaged 292 birds for the calendar year (Table 1). Average rate of lay was 216 eggs a year per hen, or a rate of about 59 eggs per 100 layers each day of the year. This record topped the provincial high average by nine eggs a year per layer and by two eggs per 100 hens a day.

Poultry operators in this sample earned more on an average flock of 176 heavy-breed dual-purpose birds of lower egg potential than on a flock of 393 light-breed layers with a ten per cent higher laying potential. However, this inter-breed differential in net returns is chiefly attributable to differences in flock management as a result of the choice of a particular strain of layers.

Main Factors Affecting Profitability.—Much of the success in small-scale egg production revolves around four factors: (1) rate of lay; (2) cost of feed per hen; (3) flock depreciation during the first 12-months in lay; and (4) egg price. These factors are most variable and a slight change in any one can spell

Table 2.—Prices and Factor Costs for 15 Poultry Flocks on Dairy Farms in Eastern Ontario, 1961

	Farm group averages		
	Eight light-breed flocks	Seven heavy-breed flocks	All 15 flocks
	—dollars—		
1. Feed prices per 100 pound			
Mash (16.2% T.P.) commercial and local-mix[a]	3.76	3.84	3.78
Whole grain (mainly oats)	2.53	2.54	2.54
Shell and grit	1.95	1.95	1.95
All feed (15.8% T.P.)	3.68	3.42	3.60
2. Pullet value at penning date	1.91	1.58	1.82
	—per cent—		
3. Flock mortality: Old hens	10.1	5.7	8.4
Pullet hens	3.4	3.1	3.3
Average	6.7	4.3	5.8
	—days—		
4. Flock age:[b] Old hens	635	520	608
Pullet hens	302	316	307
	—dollars per month—		
5. Labor	169	169	169
Semi	144	144	144
	—cents —		
6. Annual price per dozen, all grade eggs:			
(a) from grading stations	34.7	36.7	35.3
(b) from all outlets	35.4	36.6	35.7
(c) total cost per dozen, all grade eggs[c]	37.3	31.9	35.7
Grade A–Large at grading station sales	39.7	39.6	39.7

[a] About 40 per cent of all laying mash used on these farms was a local-mix of 16% T.P. (total protein). On a 15-flock average, home-grown grain provided 19 per cent of total protein content in feed used for layers.

[b] Weighted average from day of hatch to date of culling and/or end of 1961.

[c] At current feeding practices, at going local rates for labor, at four per cent interest on investment and at 3.6 per cent of gross returns for management.

the difference between profit and loss. They are highly intercorrelated. They do not all change at the same time and in the same direction and thus provide for a great management latitude in the adjustment of net income.

Main Avenues to Profit Adjustment

Production.—High rate of production per flock is probably the most important factor in ensuring bigger profits. At the 1961 level of prices, an increase of about six eggs a year per hen, or only 2.8 per cent in the daily rate of lay could mean a difference of about 13 per cent more net income or one cent more of profit per dozen eggs of all grades (Table 3).

Differences in the rate of lay per flock were large and ranged, for light-breed flocks, from a low of 43 per cent for flocks completing their 19th month in lay to 67 per cent for flocks in their 13th month of lay. The range for heavy-breed flocks was a low of 54 per cent for flocks with 15 months in lay and 64 per cent for flocks entering their 11th month in lay.

Light-breed strains are potentially higher egg-yielding than are meat-strain birds: about 250 eggs per light-breed hen in the first 12 months in lay, or 68 eggs per 100 hens a day against an average of only about 224 eggs per hen a year or about 61 eggs per 100 layers a day for meat-type birds in the first 12 months period in lay (Table 4). However, potential advantages of one breed over the other must be carefully appraised on an economic basis in the light of feed requirements, bird vitality and the salvage value of layers.

The *rate of lay* is not the whole story; the *grade of lay* is just as important a contributor to higher profits. Pullet hens require time before laying profitable grades of eggs. The period of adjustment after the date of penning is of variable length: The period is usually two to three months before they pay for their keep, and 10 and 11 months in lay before they reach an all-time peak production

Table 3.—Changes in Selected Income and Cost Factors Equivalent to One-Cent Change in Egg Price, for 15 Poultry Flocks on Dairy Farms In Eastern Ontario, 1961[a]

	Eight light-breed flocks	Seven light-breed flocks	All 15 flocks
		—dollars—	
1. Income			
per farm	69.74	32.66	52.44
per 100 hens, a year	17.74	18.51	17.97
per 100 hours of unpaid labor	12.67	10.37	11.90
		—eggs—	
2. Rates of lay:			
per hen, a year	6.1	6.1	6.1
per 100 hens, a day	1.7	1.7	1.7
		—per cent—	
3. Feed cost per 100 pounds	4.8	5.7	5.1
4. Feed ration per 100 hens, a day	1.3	1.5	1.4
5. Cost of pullets at penning date	8.9	11.2	9.4
		—cents—	
6. Price per pound of live fowl	4.0	3.0	3.6

[a] At 1961 level of prices, feeding and flock renewal practices on farms included in the study.

NOTE: This table clearly illustrates the impact of as small a variation as one cent, rep or down, in egg prices, on costs and income. For example, if the price were one cent higher, the income per farm would be $69.74 higher, on the average, for the eight light-breed flocks. If it were one cent lower, income would, of course, be $69.74 lower.

with a higher rate of top-grade eggs. The production curve then declines rapidly to few or no eggs at moulting season. A production come-back in the second year follows a similar trend as in the first season in lay, but the rate of lay never matches that for the first 12 months in lay. Year-old layers lay about 20 per cent fewer—though larger—eggs in the second year of production. In both light or heavy-breed flocks, only about 62.5 per cent of the annual output of eggs rate Grade A-Large and Extra-Large, while 24 per cent grade Medium and six per cent Grade A-Small. For every dozen A-L and X-L eggs a flock produces, it lays about six Medium and four undesirable grades and sizes of eggs.

Cost of Feed per Hen.—Feed costs in small-flock operations represent about 70 per cent of total basic costs other than unpaid labor, management and interest on capital, even under good management practices. They vary with the quality and size of feed rations.

Light-breed flocks are costlier to feed than are heavy-breed flocks, even though they consume less feed than do the meat-strain flocks. They depend more on costlier all-mash feed than on less expensive mash and whole grain rations for top performance.

The cost of feed per 100 pounds varies, too, according to the level of protein and other ingredients necessary for a balanced ration for top production. The required level of protein is about 16 per cent, much of it of grain origin. Feed costs per 100 pounds are much lower for locally-mixed than for ready-mixed commercial mash and still lower for the use of less expensive home-grown grain in the making of locally-mixed laying mash.

The amount of feed ration varies according to the size of bird and its rate of lay on the one hand, and to the feeding practices on the other. The heavier the hen and the more it lays, the greater are the feed requirements. However, more of the feed consumed goes for body maintenance and less for egg production. On an economic basis, heavy birds are better income makers in small flocks even though it takes more feed to sustain a heavy than a light-weight bird. It requires less feed per pound of body weight to feed a heavier, than a lighter layer as it does take less feed per dozen eggs as the rate of lay increases.

Feeding practices may or may not be consistent with feeding requirements. Operators of heavy-breed flocks fed not more and not less than required for a flock that averaged less than 12 months in lay: a ration of 95.8 pounds (15.8% total protein strength) a year per layer, corresponding to 26.3 pounds a day per 100 layers, over the year (Table 4). Operators of light-breed flocks fed more liberally: 99.7 pounds a year per layer or 27.3 pounds a day per 100 hens. This amount was more than the 96.7 pounds a year per layer or 26.5 pounds a day per 100 layers required for optimum output in the first 12 months in lay; and still more than the 91.7 pounds a year per layer or 25.1 pounds a day per 100 light-breed hens to produce 213 eggs per hen in their second season of production. A ration of only eight pounds a year per hen or 0.4 ounces a day per hen more may seem trifling; but it lowered the profit margin for light-breed flock operators by 21 cents per hour of unpaid labor and by 1.75 cents per dozen eggs.

Flock Depreciation.—In small flock operations flock depreciation and mortality losses are the second largest cost item; about 20 per cent of basic production costs (other than unpaid labor and interest on capital) (Table 1).

With closer supervision, mortality losses are less of a problem in small than in larger flocks. Operators are more concerned with the sale value of old hens. In deciding when to sell off old hens, the operators pay attention to current prices.

Table 4.—Net Income at Optimum Rate of Lay and Feed Input for 15 Poultry Flocks on Dairy Farms in Eastern Ontario, 1961[a]

	Eight light-breed flocks	Seven heavy-breed flocks	All 15 flocks
	—eggs a year—		
A. Potential rate of lay per hen	249.5	223.5	241.9
Potential increase per hen	36.6	1.2	26.3
	—dollars—		
Net value of increase in potential output[b] per farm	205.53	5.92	112.37
	—pounds—		
B. Feed rations per 100 hens a year:			
Feed (15.8 T.P.) used	9,971	9,582	9,881
Feed required for:			
(a) Body maintenance	6,237	6,527	6,351
(b) Egg conversion	2,934	3,055	2,965
Total	9,171	9,582	9,316
	—dollars—		
Value of feed used over requirement per farm	115.31	—	59.25
C. Optimum net income:			
1. Per farm:			
(a) attained	378.88	437.66	406.28
(b) attainable	699.92	443.38	577.90
2. Per 100 hens a year:			
(a) attained	0.90	2.48	1.39
(b) attainable	1.64	2.51	1.83
3. Per 100 dozen eggs:			
(a) attained	5.44	13.40	7.75
(b) attainable	9.45	13.58	10.67
4. Per hour of unpaid labor:			
(a) attained	(58.9c)	1.30	82.4c
(b) attainable	1.11	1.32	1.19

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[a] At 1961 level of prices attained for all grade eggs from sales to egg grading stations.

[b] Increase in gross income adjusted to changes in inputs of feed, labor and flock depreciation.

Light-strain pullets are costlier to buy or to raise than are heavy-breed pullets (Table 2). Because of a two-dozen or so higher egg potential in a year, light-strain chicks command a premium price to start with. The cost of pullets also varies according to the season of the year. Fall chicks involve confinement rearing that is costlier than raising spring chicks. This extra cost, however, is more than offset at current trends of flock renewal practices through more favorable prices for eggs and fowl. Fall chicks are matured pullets which get past the stage of laying small eggs by mid-year when the four to five-month cycle of high prices for eggs begins. They also become of replacement age at a period of peak prices for fowl in the first half of the year (Table 5).

Prices for fowl, like prices for eggs, depend on supply and demand conditions. However, prices for fowl move in an opposite direction from prices for eggs (Table 5). The market for light-weight fowl is much weaker than the market for meat-strain fowl: a 4½ pound light-breed fowl fetches only half as much per pound of live weight as does a heavy-breed fowl of 6 to 6½ pounds.

Because of seasonal price differentials and the differential between the price for light-breed pullets and the price of fowl, quite a number of operators of light-breed flocks tend to carry old layers over for few additional months to

Table 5.—Seasonality of Prices to Producers for Eggs and Fowl, Toronto, 1961[a]

	Grade A-Large eggs, per dozen		Fowl, Live No. 1, per pound	
	Ontario	Farms sampled	under five pounds	6½ pounds and over
	—cents—		—cents—	
January	30.8	31.0	10.3	21.6
February	35.4	35.2	10.0	21.5
March	33.9	34.4	11.0	23.4
April	32.1	33.0	11.3	23.4
May	33.5	33.3	10.9	20.2
June	37.0	36.5	10.5	18.5
July	43.2	43.5	10.1	18.0
August	43.2	44.1	8.9	15.3
September	50.4	50.3	8.5	15.0
October	53.0	53.1	8.2	13.3
November	47.8	46.6	7.9	15.0
December	34.5	34.5	8.9	15.6
AVERAGES				
January-June	33.8	33.9	10.7	21.4
July-December	45.4	45.4	8.7	15.3
Annual	39.6	39.7	9.6	18.2

[a] Based on weekly spot prices, Poultry and Market Reports Canada Department of Agriculture, for eggs and fowl and on days of marketing for egg prices received by the farms under study.

obtain a better price for fowl, or for another year or so to cut costs in flock replacement. This practice, however, cuts deeply into profit: old layers have a higher death rate than pullet hens and they consume as much feed as in the first year in lay, but have a reduced rate of lay in subsequent seasons.

Seasonality of Egg Prices.—One of the least dependable prices among agricultural prices is that for eggs. It fluctuates annually, monthly, weekly and often daily. It does so directly in proportion to the over-all supply and demand for eggs. The greater the over-all production and import of eggs and the lower the over-all consumption and volume of egg exports the lower the price for eggs. Egg prices go by the grade and size of eggs with prices for Grade A-Large in the lead. On a yearly basis, Grade A-Medium eggs average 14 per cent less and Grade A-Small about one-third less than the price for Grade A-Large.

Fluctuations in egg prices, however, develop into a definite price pattern throughout the year and from year to year. This pattern runs in half-yearly cycles corresponding with the cyclical rise and fall in the rate and in the grade of lay as well as with the expansion and contraction in the size and number of laying flocks throughout the country. The average price for A-Large eggs runs about one-third higher in the second than in the first half of the year (Table 5).

There is not much egg producers can and really want to do in changing the cyclical laying habits and rate of lay of hens, and the cyclical run of prices for eggs. The seasonal pattern of prices offers to alert flock operators, as wide a potential for profit adjustment as any other factor of profitability, including that of a change to marketing outlets other than normal. Light-breed flock operators, in our sample survey, received 1.5 cents more, on a yearly basis, per dozen eggs sold to egg grading stations than did, on the average, all producers in Ontario. Heavy-breed flock operators received two cents more per dozen eggs than did light-breed flock operators (Table 2). Why? The answer lies in better seasonal production adjustments, that is, in rearing pullets at an earlier period of the year and in the timely liquidation of old flocks.

FARM ORGANIZATION, RED RIVER AREA OF MANITOBA, 1957 AND 1962

L. M. Johnson

A comparative analysis of the farm business on two groups of farms in the Red River area of Manitoba illustrates some important changes in resource use and production patterns between 1957 and 1962. Data used for this analysis were abstracted from two studies[1] conducted by the Economics Division. Thirty-one two quarter-section farms and 21 three quarter-section farms were visited in 1957 and 24 two quarter-section farms and 25 three quarter-section farms were visited in 1962. The same general area was covered in the two studies and a few of the same farms were visited in both years.

Table 1.—General Characteristics of Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Item	1957		1962	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
Total acres per farm	333	491	314	497
Cropland acres per farm	320	463	307	483
Tenure: full owners—per cent of farms	77	90	83	52
part owners—per cent of farms	23	10	13	44
renters—per cent of farms	...	...	4	4
Average age of operators	47	46	47	45
Average years operating present farm	17	17	19	21
Per cent of farms with tractors	100	100	100	100
Tractors per 100 farms	160	186	160	172
Per cent of farms with combines	94	90	96	96
Combines per 100 farms	85[a]	90	94[b]	86[a]
Per cent of farms with car	71	100	92	92
Cars per 100 farms	71	105	92	100[c]
Per cent of farms with truck	94	90	88	96
Turcks per 100 farms	103	95	106	106[d]
Number of farms	31	21	24	25

[a] Five farms reported owning only one-half share of their combines.
[b] One farm reported owning two combines and three had one-half share of a combine.
[c] Two farms reported owning two cars each.
[d] Two farms reported owning two trucks and one farm had one-half share in a truck.

The farms were located on soils developed on a fine lacustrine plain which, before cultivation, was treeless and covered with meadow, prairie, and wetland grasses.[2] These soils have a relatively high organic matter content and a good moisture retention capacity. The most serious problems are surface flooding and waterlogging in wet years and soil drifting in drier years. These soils are suited to production of the common grain crops. Crop yields are relatively stable. A limited water supply hinders livestock production. About 95 per cent of the land is improved.

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[1] Preliminary reports on "Changes in Farm Organization, Red River Area of Manitoba", Economics Division, Canada Department of Agriculture, Winnipeg, Manitoba, September 1958 and May 1963.

[2] Reconnaissance Soil Survey of Winnipeg and Morris May Shet Areas, by Ehrlich, W. A., E. A. Poyser, L. E. Pratt, and J. H. Ellis, Manitoba Soil Survey, Soils Report No. 5, October 1953.

Table 1 describes some general characteristics of these farms and of the farm operators. The average age of the farm operator remained about the same between 1957 and 1962 but the number of years he had operated his present farm increased by two years on the one half-section farms and by four years on the three quarter-section farms. An important change was noted on the tenure of these farms. On the two quarter-section farms the number of fully-owned farms increased by six per cent whereas the number of fully-owned three quarter-section farms decreased by 38 per cent. Part-owners of one half-section farms decreased by 10 per cent but part-owners of three quarter-section farms increased by 34 per cent.

Mechanization did not change very much during this period. The number of tractors decreased between 1957 and 1962 on the three quarter-section farms but these farms had a higher tractor investment and kept larger tractors in the latter year. In 1957 only 14 per cent of the farms had tractors of four-plow size or over compared with 33 per cent in 1962. The number of tractors on the two quarter-section farms remained the same and investment per farm increased by only three per cent. The number of cars increased on the two quarter-section farms by 21 per cent and the number of trucks increased slightly on the three quarter-section farms. All farms had either a car or a truck in 1957 and in 1962.

Land Use.—The wheat acreage remained about the same between 1957 and 1962 (Table 2). However, the barley acreage decreased by over 90 per cent in both size-groups and acreages of oats and flax increased. Many farmers have expressed dissatisfaction with barley yields in the past few years and a large number did not grow any barley in 1962. Summerfallow and improved hay and pasture acreages decreased on the two quarter-section farms but increased on the three quarter-section farms between 1957 and 1962.

Livestock Numbers.—Table 3 describes the average livestock inventory on the farms and the changes that occurred between 1957 and 1962. In 1957 sixty-five per cent of all farms kept some cattle, 58 per cent had some hogs, 63 per cent had some chickens and four per cent had turkeys. Comparable figures for 1962 were 71, 61, 71 and four per cent, respectively. Generally, more farms kept more livestock in 1962 than in 1957. Some farmers in the Red River area, have shown

Table 2.—Distribution of Cropland Acreage, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Crop	1957		1962		Changes from 1957	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
	— acres —				— per cent —	
Wheat	80	134	86	129	8	− 4
Oats	46	39	66	86	43	121
Barley	34	55	3	3	−91	−95
Flax	48	95	66[a]	108	38	14
Other[b]	14	28	16	17	14	−39
Improved hay and pasture	25	11	19	17	−24	55
Summerfallow	73	101	51	123	−30	22
Total	320	463	307	483	− 4	4
Number of farms	31	21	24	25		

[a] Two acres of oats were planted with flax and are included with the flax acreage.

[b] Includes sunflowers, soybeans, peas, rape, corn for fodder, grass and legume seed, mixed grain, buckwheat.

interest in feeder cattle operations and one farmer purchased 73 steers in 1962. On the whole, 80 per cent of all farms had some productive livestock or poultry in 1957 compared with 86 per cent in 1962. Horses have almost disappeared in this area; and their numbers kept on decreasing between 1957 and 1962. None of these farms had any sheep.

Labor.—Hired labor and unpaid family labor decreased between 1957 and 1962 (Table 4). This decrease was pronounced on the two quarter-section farms. Farmers probably find it increasingly difficult to secure experienced farm help, but mechanization probably lessens labor requirements. In any event, farm

Table 3.—Number of Livestock According to Class of Livestock, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Type	1957		1962		Change from 1957	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
	— average number per farm —				— per cent —	
Cattle: Cows[a]	3.4	1.6	2.6	2.4	−24	50
All cattle[a]	7.0	4.0	7.2	6.2	3	55
All cattle purchases	0.4	1.4	4.0	0.9	900	−36
All cattle sales	3.1	2.2	3.4	2.2	10	0
Hogs: Sows[a]	1.0	1.0	0.6	1.0	−40	0
All hogs[a]	10.2	7.0	12.0	14.8	18	111
All hog purchases	1.9	0.5	10.2	11.8	437	2,260
All hog sales	9.0	8.9	16.3	16.9	81	90
Chickens[a]	200	112	183	288	− 8	157
All chicken purchases	242	205	187	349	−23	70
All chicken sales	94	80	157	279	67	249
Turkeys[a]	....	10	....	14	....	40
All turkey purchases	....	22	....	17	....	−23
All turkey sales	....	....	....	15	....	....
All horses[a]	0.6	0.4	[b]	0.2	−87	−50
Number of farms	31	21	24	25	....	....

[a] Average inventory beginning and end of year.
[b] Only two farms kept horses.

Table 4.—Labor on Farms, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Type	1957		1962		Change from 1957	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
	— average months per farm —				— per cent —	
Hired labor	0.86	1.38	0.29	1.09	−66	−21
Unpaid family labor	3.12	2.30	1.93	2.16	−38	− 6
Operator	11.58	11.52	11.90	11.77	3	2
Total	15.56	15.20	14.12	15.02	− 9	− 1
Number of farms	31	21	24	25		

operators spent slightly more time on their farms in 1962 than in 1957. Although less labor was hired in 1962 more farms had some hired labor, 59 per cent in 1962 as compared with 46 per cent in 1957. The average wage paid was about $165 a month in 1957 and $140 a month in 1962. This does not necessarily indicate a decline in farm wages because the rates would vary, depending on the season, the specific job to be performed, and the age and experience of the hired workers.

Between 1957 and 1962 there was a significant increase in labor efficiency (Table 5). This is possibly the result of the trend toward larger and more powerful machinery and perhaps fuller use of available labor, especially by the livestock enterprise during the winter.

Capital Investment.—The total investment per farm increased by 16 per cent between 1957 and 1962 (Table 6.) Most of this increase (about two-thirds) can be attributed to higher real estate values, one-quarter to machinery and about one-tenth to increased livestock investment.

In 1957 total investment ranged from $17,677 to $53,318 per farm on the two quarter-section farms and from $29,777 to $65,390 on the three quarter-

Table 5.—Acres of Cropland and Number of Animal Units Per Man-Equivalent[a], Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Item	1957		1962		Change from 1957	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
					— per cent —	
Number of man-equivalents	1.30	1.27	1.18	1.25	— 9	— 2
Acres in cropland	320	463	307	483	— 4	4
Number of animal units	9.5	5.6	10.1	13.4	6	139
Acres of crop per man-equivalent	246	365	260	386	6	6
Animal units per man-equivalent	7.3	4.4	8.6	10.7	18	143
Number of farms	31	21	24	25		

[a] Twelve months of labor represent one man-equivalent.

Table 6.—Investment in Real Estate, Machinery and Equipment, Livestock, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

	1957				1962			
	Two quarter-section		Three quarter-section		Two quarter-section		Three quarter-section	
	Per farm	Per crop-land acre	Per farm	Per crop-land acre	Per farm	Per crop-land acre	Per farm	Per crop-land acre
	— average dollars —							
Real estate	24,885	77.77	35,448	76.56	28,294	92.16	40,070	82.96
Machinery	6,392	19.98	8,263	17.85	7,187	23.41	10,431	21.60
Livestock[a]	1,159	3.62	786	1.70	1,565	5.10	1,641	3.39
Total	32,436	101.37	44,497	96.11	37,046	120.67	52,142	107.95
Number of farms	31	....	21	....	24	....	25	....

[a] Includes horses.

section farms. In 1962 total investment ranged from $21,896 to $50,194 on the two quarter-section farms and from $38,026 to $69,167 on the three quarter-section farms.

The higher real estate investment was the result of a general increase in land values, the improvement of buildings, the installation of running water, and the building of new homes. In 1957 the average age of the houses was 25 years compared with 22 in 1962. The higher investment in livestock was the result of an over-all increase in the numbers of productive livestock, accompanied by generally higher livestock prices. Machinery investment increased as a result of a general increase in machinery prices and also because of some changes in size and type of machinery. For instance, in 1962 some of the larger farmers were using crawler-type tractors which were much more expensive than the wheel-type tractors used in 1957. Combines and trucks were larger and hence more costly in the latter year. Farmers, on the other hand, were using older machinery: on the average, tractors were 2.3 years, combines 2.3 years, cars 1.3 years and trucks 2.7 years older in 1962 than in 1957.

Operating Statement.—Total receipts were nearly twice as high in 1962 as in 1957 (Table 7). These receipts included all cash farm income, plus perquisites and house rent, but excluded non-farm income. Crop receipts were calculated for the crops harvested in 1957 and 1962, minus feed and seed requirements for the business year. Livestock receipts included all income received from sales of livestock and livestock products plus inventory changes. Receipts for crop and hail insurance, custom work, and other miscellaneous farm income were also included.

The large increase in average receipts for 1962 was mainly the result of higher yields of all grains in 1962 accompanied by a fairly large increase in the

Table 7.—Operating Statement, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Item	1957		1962	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
	— average, dollars per farm —			
Receipts				
Cash farm receipts and inventory change	5,116	7,274	10,119	13,264
Farm produce used in home	177	96	198	198
House rent	370	393	467	486
Total receipts	5,663	7,763	10,784	13,948
Expenses				
Cash operating expenses	2,326	3,311	3,794	4,167
Depreciation				
Buildings	328	311	336	364
Machinery	1,262	1,529	1,417	1,851
Interest on capital investment at five per cent	1,622	2,225	1,852	2,607
Total expenses	5,538	7,376	7,399	8,989
Returns to operator and family for labor and management	125	387	3,385	4,959
Non-farm income[a]	164	101	811	362
Number of farms	31	21	24	25

[a] Includes family allowance, pensions and off-farm work.

prices received for wheat and flax. For instance, in 1957 average yields for wheat, oats, barley, flax were 19, 31, 13 and five bushels an acre, respectively. Comparable yields in 1962 were 25, 46, 28, and 10 bushels an acre. In 1957 the average price[1] used to calculate receipts for wheat and flax, respectively, was $1.42 and $2.76 a bushel compared with $1.54 and $3.02 a bushel in 1962. Prices used for oats and barley were about the same in both years.

Livestock receipts also increased. In 1957, on the two quarter and three quarter-section farms, income from livestock[2] and livestock products averaged $1,569 and $1,202 per farm, respectively. Comparable figures for 1962 were $2,298 and $2,685 per farm. This increase in livestock receipts was a result of an increase in livestock numbers and in livestock prices.

Non-farm income increased by over 300 per cent between 1957 and 1962.

In 1957 total receipts[3] ranged from $2,137 to $10,713 per farm on the two quarter-section farms and from $2,806 to $12,244 on the three quarter-section farms. In 1962 total receipts ranged from $4,537 to $19,455 on the two quarter-section farms and from $4,310 to $28,202 on the three quarter-section farms.

Average total expenses increased by 31 per cent between 1957 and 1962. There was a reduction in outlay for hired labor and weed sprays in both size-groups of farms and a small reduction for seed expenses on the three quarter-section farms. All other expenses increased, for such items as fertilizers, insect sprays, custom work, crop insurance, livestock purchases, feed and depreciation charges for machinery. These increases reflect the generally higher price levels and the fact that more farmers were spending money for these items. For instance, nineteen per cent of all farms used fertilizers in 1957, compared with 43 per cent in 1962. No insect sprays were used in 1957 but, owing to a relatively severe outbreak of grasshoppers in the area 96 per cent of all farms had to do some spraying in 1962. Sixty-two per cent of the farms paid for custom work in 1957 compared with 78 per cent in 1962. Sixty-nine per cent of the farmers purchased livestock for an average cost of $133 per farm in 1957. In 1962 seventy-three per cent of the farms purchased livestock, at an average cost of $586 per farm. Feed expenses increased, possibly because of the increase in livestock numbers. Depreciation charges on machinery increased as a result of an increase in machinery investment between 1957 and 1962. Crop insurance was not available to these farmers in 1957; this new and added expense averaged $107 per farm in 1962.

Total expenses[4] in 1957 ranged from $1,397 to $5,086 per farm on the two quarter-section farms and from $1,757 to $5,340 on the three quarter-section farms. Total expenses in 1962 ranged from $1,678 to $16 992[5] on the two quarter-section farms and from $2,213 to $6,128 on the three quarter-section farms.

The large increase in total receipts, accompanied by a relatively smaller increase in total expenses, resulted in a marked increase in returns to capital and operator and family labor between 1957 and 1962. In 1957 these returns ranged from minus $1,043 to $5,448 and from minus $1,648 to $6,467 per farm on the two and three quarter-section farms, respectively. In 1962 returns ranged from $1,462 to $11,398 and from minus $1,423 to $21,769 on the two and three quarter-section farms.

After charging interest for capital investment the average returns to labor and management in 1957 averaged $125 and $387 per farm on the two and three quarter-section farms, respectively. Comparable figures for 1962 were $3,385 and $4,959 on the two and three quarter-section farms. These farms could not expect to receive this type of returns every year, for 1962 was an exception or a year well above average.

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[1] Average farm price weighted by the grade estimated by the farmer (15-cent freight zone).

[2] Includes inventory change.

[3] Excludes farm products consumed in home and house rent.

[4] Excludes depreciation on buildings and machinery.

[5] Livestock purchases amounted to $13,965 on this farm.

Indebtedness.—The Red River area has been witnessing an increase in the number of farms with debts and a large increase in average indebtedness per farm (Table 8). Between 1957 and 1962 debts increased by 125 per cent on the two quarter-section farms and by 354 per cent on the three quarter-section farms. In 1957 fifty-four per cent of all farms had some debts, ranging from $32 to $7,900 per farm. In 1962 seventy-three per cent of all farms had some debts and these debts ranged from $100 to $23,577 per farm.

Long-term loans (over five years) accounted for over 50 per cent of the indebtedness on both size-groups of farms in both years. This type of credit was used mainly to acquire land. Government agencies were the most important and private individuals the next most important source of credit for long-term debts.

Intermediate-term loans (one to five years) were used mainly to purchase machinery, livestock, buildings and some farmers borrowed money to pay taxes and defray general operating expenses. Sources of this type of credit were: the Farm Improvement Loans of the federal government and banks and credit unions and some private individuals.

Table 8.—Farm Indebtedness, Two and Three Quarter-Section Farms, Red River Area of Manitoba, 1957 and 1962

Item	1957		1962	
	Two quarter-section	Three quarter-section	Two quarter-section	Three quarter-section
	— average, dollars per farm —			
Type of debt				
Long-term	1,194	1,014	3,014	4,965
Intermediate-term	672	483	895	1,810
Short-term	158	91	636	430
Average debts per farm[a]	2,024	1,588	4,545	7,205
Relative importance of debts				
Percentage of farms with debt	68	32	71	76
Percentage of farms with long-term debts	42	19	54	56
Percentage of farms with intermediate-term debts	42	29	54	52
Percentage of farms with short-term debts	32	14	33	48
Number of farms	31	21	24	25

[a] Excludes hospital and doctor bills.

Short-term loans (less than one year) accounted for only a small portion of total indebtedness but there was a marked increase in short-term debts between 1957 and 1962. This type of credit was secured from oil and feed companies, garages, municipality (taxes), and local storekeepers.

Summary.—This comparison of farms in the Red River area of Manitoba illustrates some of the changes in the farm business which occurred between 1957 and 1962. On the two quarter-section farms more farms were owned and fewer partly-owned or all-rented in 1962 than in 1957. On the other hand, fewer three quarter-section farms were owned and more were partly-owned or all-rented. The land use pattern has changed: barley acreages dropped sharply and the oats and flax acreage increased. A greater number of farms kept more livestock in 1962 than in 1957. Hired and unpaid family labor decreased but labor was used more efficiently. Higher real estate values and greater machinery and livestock investment led to a considerable increase in total investment and were accompanied by a marked increase in average indebtedness per farm. Total receipts increased, but expenses increased relatively less; the operator and his family had higher average returns for their labor and management in 1962 than in 1957.

THE NEW JAPANESE JOURNAL OF AGRICULTURAL ECONOMICS

The International Association for Agricultural Economics in Japan began, in April 1963, the publication of an English Journal of Agricultural Economics, bearing the title of The Rural Economic Problems. The April issue was a preliminary issue containing well-documented articles on: Plurality of the Employment Structure in Japanese Agriculture; Farm Economic Analysis of Paddy-Field Cropping System in Japan; Social Accounting of Agriculture in Japan; Two Patterns of Short-Run Supply Behavior of the Subsistence Farm; Significance of Soil and Topographic Conditions in the Development of Commercial Agriculture in Dryland Farming Areas; Consumer's Attitude and Marketing Margins of Fruits and Eggs; and Agricultural Price Policies by Commodities in Japan.

The International Association for Agricultural Economics in Japan realizes that experiences in Japanese agricultural development are of particular interest to most developing countries. Another reason for launching this new Journal in English is the desire to promote the exchange of knowledge in agricultural economics between Japanese and other economists.

The high degree of scholarship displayed in handling the subject matter of the seven articles in the preliminary issue reflects the maturity of the discipline of agricultural economics in a country which still considers itself as a "developing" country. In fact, Japan has an abundant economic literature and several specialized journals in agricultural economics in the Japanese language.

The Journal will be issued twice a year and each issue will be of about 100 pages; the annual subscription rate is $4.00 and orders may be placed direct with the publisher: Nosei Chosa Iinkai, 1-26 Nishigahara, Kita -Ku, Tokyo, Japan.

PUBLICATIONS OF THE ECONOMICS DIVISION

Supplement to Federal Agricultural Assistance Programs, Canada, 1954-56.

Cameron, Marjorie R., Ottawa, March 1963. pp. vi + 183-319.

This, the third supplement to the "main bulletin", Federal Agricultural Assistance Programs, Canada, 1945-1956, continues the chronological series through the four fiscal years from April 1, 1958 to March 31, 1962. The two sections on Special Legislation and on Programs Authorized under Annual Appropriation Acts are complemented by statistical tables on price support programs; Prairie grain advance payments; payments under the Temporary Wheat Reserves Act; grants to agricultural fairs, exhibitions and museums; feed freight assistance; and total assistance paid by the Canada Department of Agriculture in the fiscal years 1952-53 to 1961-62 inclusive and in each of the fiscal years during that period.

Canada—Trade in Agricultural Products with the United Kingdom, the United States and All Countries, 1961 and 1962. Ottawa. July 1963. pp. ii + 33.

The eighth in a series of annual reports on Canada's trade in agricultural products with other countries. It consists of 14 statistical tables compiled by J. A. F. Paquette of the Policies and Prices Section. Table 1 is a historical summary, 1930-62, of exports and imports; Tables 2-5 supply data on total exports and on exports of agricultural products, by major commodity groupings, 1958-62, to all countries, the U.K., the U.S., and the European Economic Community; Tables 6-8 contain data on total imports and on imports, by major commodity groupings, 1958-62, for all countries, the U.K., and the U.S.; Table 9 gives figures on total trade and on trade in agricultural products in 1961, for the principal countries. Table 10 is a summary of the balance of trade in agricultural products and Table 11 gives data on the balance of trade, for principal agricultural commodities, in 1961. Tables 12, 13, and 14 do for 1962 what the three previous tables do for 1961.

Marketing Boards in Canada, 1961 National Summary—Les Offices de vente au Canada, Résumé national, 1961. Heighton, V. A. Ottawa. September 1963, pp. 21.

A bilingual descriptive report of the operations of producer marketing boards established under provincial legislation.

UNITED NATIONS PUBLICATIONS

Available from: Sales and Circulation Section, Department of Public Information, United Nations, New York, U.S.A.
Sold in Canada by the Queen's Printer, Ottawa.

Economic and Social Consequences of Disarmament. Department of Economic and Social Affairs. New York, 1962. Two volumes: Vol. I, pp. ix + 66. Price: $U.S. 0.75; Vol. II, pp. v + 304. Price: $U.S. 3.00.

Volume I consists of a report prepared by a group of experts appointed by the Secretary-General "to assist him in conducting a study of the economic and social consequences of disarmament in countries with different economic systems and at different stages of economic development."

Volume II contains the replies of governments and communications from specialized agencies on the economic and social consequences of disarmament.

Commodity Survey, 1962. Prepared by the Bureau of General Economic Research and Policies. New York, 1963. pp. viii + 129. Price: $U.S. 1.50.

The sixth in a series of reports prepared to assist the Commission on International Commodity Trade in its annual discussion of the world commodity situation. Part I deals with Recent Trends in Primary Commodity Trade and Part II with the Current Commodity Situation.

World Energy Supplies, 1958-1961. Statistical Papers, Series I, No. 6. Department of Economic and Social Affairs. New York. 1963. pp. 115. Price: $U.S. 1.50.

A paper that supplies statistical data on the production, trade and consumption of energy in each of the four years from 1958 to 1961 inclusive for about 160 countries.

Yearbook of the United Nations, 1961. Office of Public Information, U.N. New York, 1963. pp. x + 813. Price: $16.00.

The fifteenth issue of the U.N. Yearbook gives a compact account of the several activities of the U.N. and its related agencies in 1961 (except for proceedings of the General Assembly in March and April 1961, which were dealt with in the previous volume). It also covers the debates and decisions of the General Assembly in January and February 1962. Part One: The United Nations deals with such matters as Political and Security Questions, Economic and Social Questions, Questions governing Non-Self-Governing Territories and the International Trusteeship System, Legal Questions, and Administrative and Budgetary Questions.

The section on Economic and Social Questions is of especial interest to economists and sociologists. It provides a review of the world economic situation and deals, among other things, with such matters as international trade and commodity problems, U.N. operational activities for economic development, the economic development of less developed countries, the activities of the U.N. regional economic Commissions, human rights, assistance to refugees, population problems, and other organizational, economic and social problems.

Part two surveys the activities of the 16 intergovernmental organizations related to the U.N.

Appendices to the Yearbook include: a list of all U.N. member States, the full texts of the U.N. Charter and of the Statute of the International Court of Justice, the structure and membership of the various U.N. bodies, a list of matters considered by the principal organs of the U.N., and a list of members of delegations to the General Assembly and various Councils of the U.N.

Farm Organisation and Incomes in South West England, 1961-62. Morris, S. T., H. W. B. Luxton and G. D. Davies. Department of Economics (Agricultural Economics) University of Exeter, 1, Courtenay Park, Newton Abbot, Devon, England. Report No. 139. March 1963. pp. 59. Price: 5/.

A report on the results of the Farm Management Survey carried out in the counties of Cornwall, Devon, and Dorset for the 1961 crop year. This survey is carried out annually to ascertain changes in output, costs and incomes and to provide data for the calculation of farm management advisory standards.

Studies in Process Analysis. Economy—Wide Production Capabilities. Monograph 18, Cowles Foundation for Research in Economics at Yale University. Edited by Manne, Alan S. and Harry M. Markowitz. John Wiley & Sons, New York and London. 1963, pp. viii + 427. Price: $U.S. 14.00.

This book contains 17 papers presented at a Conference sponsored by the Cowles Foundation and held at Yale University, April 24-26, 1961, plus an Appendix on the Basic Concepts of Activity Analysis. The editors have divided the proceedings into five different parts. Part I deals with the scope and method of process analysis, Parts II-IV with the petroleum and chemicals, agriculture, and the metals and metalworking sectors respectively, Part V is concerned with the programming of economic development in certain key sectors of the Mexican economy and with sector studies in economic development planning.

Agriculturists will be especially interested in the papers on Spatial Programming Models to Specify Surplus Grain Producing Areas, by Earl O. Heady and Alvin C. Egbert, and on Spatial Price Equilibrium and Process Analysis in the Food and Agricultural Sector, by Karl A. Fox. Heady and Egbert are concerned with the use of activity analysis in making estimates of optimal spatial patterns of grain production in the United States. Their report deals only with the first phase of a broader and continuous analysis that will encompass the interregional structure of the U.S. farm industry. They will bring their programming framework up to date in terms of technical coefficients, production functions, and demand restraints, and will project their analysis into the future so as to give it added significance as a guide in the development of regional production patterns and in the formulation of agricultural policies geared to food demand prospects and agricultural production possibilities. In the current report they discuss input-output and time-series regression models as alternative techniques to be used in the analysis of those factors that lead to the most judicious choice in the planning or regional production patterns and spatial adjustments in agriculture and give their reasons for selecting linear programming instead of the two other types of models as their method of analysis. They describe the five linear programming models which they have been using to determine the optimal allocation of wheat and feed grains production among regions, define the five basic assumptions followed in probing and trying to improve the structure of the grain economy, discuss the difficulties encountered in making a meaningful delineation of grain-producing regions, describe the methods used in estimating costs, per acre, of grain production, give their reasons for the use of certain specified demand restraints, explain the structure of the coefficient matrices and describe the weighting methods followed to form aggregate coefficients and restraints; say a few words on the significance and limitations of the results of their research project, and discuss ways in which they have improved later models now underway in their studies of the economics of location-space in U.S. agriculture.

Fox's task was to give a "fuller treatment" of the locational, transportation, and marketing aspects of food and agriculture and "to suggest ways of integrating spatial equilibrium analysis with linear programming formulations of agricultural production". He describes his "first empirical application of the spatial equilibrium model", a one-commodity model in which feed supplies in each region were predetermined, as well as those variables which influence the position of the regional demand curves for feed. He complements this description with a few notes on the Fox and Taeuber model of 1955, intended to serve as an illustration of the complications inherent in the handling of two interdependent commodities, namely, livestock and feed. He then explains how this model could be expanded to include more commodities, more regions, or both more commodities and more regions, analyzes the effects of the time dimension on the appropriate number of regions, and outlines some short-cut solutions for the handling of large numbers of regions.

Fox says that "it would seem desirable to integrate the spatial equilibrium model also with a linear programming formulation of agricultural production". He discusses the problems entailed by such a blending task and suggests two approaches to these problems that could make it "possible to reinstate the computational convenience of continuous arithmetic functions in a manner closely related to the linear programming production base."

Yearbook of International Trade Statistics, 1961. Department of Economic and Social Affairs, Statistical Office of the U.N. New York. 1963. pp. 709. Price: $U.S. 8.00 (or equivalent in other currencies).

The twelfth issue of the Yearbook. It contains summary tables on: (a) world trade by regions and countries; (b) world exports by provenance and destination; (c) world regional export and import quantum and price indices and indices of terms of trade, and (d) indices by commodity classes.

It also contains detailed annual statistics for 138 countries which accounted in 1961 for about 97 per cent of the aggregate trade of countries which supplied data for that year ($133,150 million).

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